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**MEMOIRS
OF AN UNCONVENTIONAL SOLDIER**

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COLONEL J. F. C. FULLER.

[Frontspiece I

MEMOIRS
OF AN UNCONVENTIONAL
SOLDIER

By
MAJOR-GENERAL J. F. C. FULLER
C.B., C.B.E., D.S.O.

*“ Asses would rather have
refuse than gold.”—HERAKLEITOS*

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SONIA.

**TO
SONIA**

PREFACE

“The concealment of truth is the only indecorum known to Science.”—*Westermarck.*

IN these Memoirs I have refrained from entering into my private life, as it is of no public interest; and though I have taken part in two wars—the South African War of 1899–1902 and the World War—I have, for reasons mentioned in Chapter I, said little about the former, though in some ways it was the more interesting of the two, and certainly the more gentlemanly. As regards the second, I have dealt mainly with my work as Chief of the General Staff of the Tank Corps, and in doing so the reader must bear in mind that the tank was a new weapon suddenly emerging out of an idea, which found its clearest expression in the mind of Colonel E. D. Swinton. Being such, there was no literature to guide us in its use, and it is for this reason that I have quoted so fully from papers on tactics, organisation, etc., which I wrote during 1917 and 1918. Further, in this respect it should be remembered that normally the knowledge of a new or improved weapon is attained through a lengthy process of trial and error, out of which a literature gradually evolves; but that, during a war, there is insufficient time for so slow a development. Consequently, it was incumbent to create a literature largely hypothetical, though based on the powers of the tank in relation to the conditions created by the older arms. It was here that the real clash occurred between the Tank Corps and G.H.Q. Whilst the latter was tactically constitutional, the former was compelled to be revolutionary. It was a clash between two schools of thought, one relying on memory and the other on imagination. Therefore, when I criticise the adherents of the former, it must not be overlooked that my criticism is

aimed against their craftsmanship and not against their integrity as soldiers.

.

I had expected my preface to end here, and had dated it in advance—November 20, 1935 (the anniversary of the Battle of Cambrai), when another war began and with it yet another small adventure. In the middle of September, Lord Rothermere was good enough to ask me to act as Special Correspondent to the *Daily Mail* in the Italo-Abyssinian war—a proposal I was delighted to accept. Then my millstone became the proofs, and this was removed from my neck by my friend Captain J. Russell Kennedy, M.C. To him I owe a debt of gratitude for seeing them through the press, and still more so for a number of valuable suggestions. The set of proofs dispatched to me, which reached me only on December 31, was hastily read through whilst flying back from Asmara to London. An appropriate ending, so it seems to me, to a book which deals so considerably with warfare in the making.

J. F. C. FULLER.

January 20th, 1936.

CONTENTS

CHAPTER	PAGE
I. IN THE BEGINNING	I
II. IS THIS WAR?	31
III. CATTLE-WIRE AND SPADE	51
IV. THE POTTER'S WHEEL	87
V. THE GRAND LAMASERY	113
VI. THE FIFTH ELEMENT	143
VII. AN EPOCH ENDS	169
VIII. KNIGHTS IN ARMOUR	192
IX. DOUGH WITHOUT YEAST	220
X. FOLLY'S GRIM DIVIDEND	245
XI. THE DECISIVE BATTLES	269
XII. IRON, IRON EVERYWHERE!	291
XIII. PLAN 1919	318
XIV. YEAST WITHOUT DOUGH	342
XV. THE TOWER OF BABEL	364
XVI. THE IRON ACORN	390
XVII. A WANDERING STUDENT	416
XVIII. SYNTHETIC-ICONOCLASM	452

ILLUSTRATIONS

MAPS

AT END OF BOOK

BATTLE OF ARRAS, APRIL 9, 1917	
BATTLE OF PASSCHENDAELE, JULY 31, 1917	
BATTLE OF CAMBRAI, NOVEMBER 20, 1917	
BATTLE OF HAMEL, JULY 4, 1918	
BATTLE OF AMIENS, AUGUST 8, 1918	

PLATES

	FACING PAGE
COLONEL J. F. C. FULLER	<i>Frontispiece</i> I
SONIA	„ II
TANK CORPS H.Q., BERMICOURT CHÂTEAU	84
MAJOR-GENERAL H. J. ELLES AND COLONEL T. J. UZIELLI	88
“CLAPHAM JUNCTION,” PASSCHENDAELE, SEPTEMBER 23, 1917	160
TANKS ENTRAINED FOR CAMBRAI	226
CAMBRAI CHRISTMAS CARD, 1917	226
CANADIANS RETURNING FROM TRAINING, JUNE 12, 1918	308
NEAR WARFUSÉE—ABANCOURT, AUGUST 8, 1918	308
MARK V TANKS GOING INTO ACTION, AUGUST 10, 1918	314
MEDIUM A TANKS ADVANCING THROUGH THE MORNING MIST, AUGUST 24, 1918	314
THE ALBERT—BAPAUME ROAD NEAR POZIÈRES, NOVEMBER 11, 1918	362

DIAGRAMS

	PAGE
No. 1 ATTACK BY PENETRATION I	479
„ 2 ATTACK BY PENETRATION II	480
„ 3 STRATEGIC PLAN OF WESTERN FRONT	481
„ 4 ORGANISATION OF A DEFENSIVE FRONT	481
„ 5 TANK BATTALION ORGANISATION	482
„ 6 TANK TACTICS I	483
„ 7 TANK TACTICS II	483
„ 8 GERMAN ARTILLERY TACTICS	484
„ 9 TANK DECISIVE ATTACK	484
„ 10 CAMBRAI PROJECT, AUGUST 4, 1917	485
„ 11 CAMBRAI PROJECT, OCTOBER 29, 1917	485
„ 12 CAMBRAI TACTICS, ASSEMBLY FORMATION	486
„ 13 CAMBRAI TACTICS, APPROACH FORMATION	486
„ 14 CAMBRAI TACTICS, ATTACK FORMATION	487
„ 15 TANK CORPS G.S. ORGANISATION	488
„ 16 TANK CORPS G.S. REORGANISATION	488
„ 17 THE MORCELLATED ATTACK	489

MEMOIRS OF AN UNCONVENTIONAL SOLDIER

CHAPTER I

IN THE BEGINNING

I HAVE written many books—a round two dozen in all—and behind each has stood a creative idea. Yet this present one, the twenty-fifth, as I now sit down to write it, glooms down upon me from out the memories of the past like a lichen-spotted tombstone upon which I must engrave my epitaph. Therefore, to begin with, let me quote these few words written by my old friend Herodotus: “No one believes warnings, however true. Many of us Persians know our danger, but we are constrained by necessity to do all our leader bids us. Verily ’tis the sorest of all human ills, to abound in knowledge and yet have no power over action.” That has been my lot, anyhow as a soldier, and it all began, so I am told, on September 1, 1878, in that sleepy little city of Chichester at the inconvenient hour of five in the morning.

That there may be some hidden magic in dates is possible, and to such as are skilled in such figurings 1878 may or may not convey something portentous. Nevertheless, to me the dates which preceded it are in their way Delphic: my paternal grandfather was born in 1789, my maternal in 1821, my father in 1832, and my mother in 1848—all revolutionary years. And further still, on my father’s side I am descended from Roundheads and on my mother’s from Huguenots—truculent, self-opinionated people. So it came about that, at the age of five, I was already a heretic.

It happened thus: In the drawing-room of my father’s

house in Chichester, under a black-enamelled Victorian cabinet, lay two great morocco-bound volumes of Dante's *Divina Commedia*, illustrated by Gustave Doré. Being a true child of St. Augustine, I preferred the *Inferno*, and would spend hours turning over its pages to gaze upon its dreadful pictures: men and women frozen in the mud, blazing in hell fire, turned into gnarled trees and into crawling spiders. Then one night in my cot I argued to myself this wise: Such punishment was everlasting (so probably I had been told); but it could not be everlasting, it might last for millions and millions of years, and I remember clearly trying to figure it out; yet it could not be for ever and ever and ever, for then there would be no God. This may or may not be theological logic; but to me, as a child of five, it was a profound revelation, and perhaps in its way it shaped the whole trend of my mental life. Anyhow, whether limited or unlimited hell fire had anything to do with it, I was an exceptionally truthful child. I remember once, probably a year or two later, an uncle of mine remarking upon this fact, when I was supposed to be out of earshot, and though I took the compliment for granted, to my misfortune I never forgot his words, and worse still lived up to them; for if there is one thing which leads to success in this life, it is the gift of lying in a convincing way. To be a born liar, that is, to be possessed of a natural antipathy for truth in all its many forms, is, I am certain, the high road to prosperity and renown. That I ever got so far, as this book will show, must, I am afraid, stand to my credit or discredit, whichever way the reader looks at it, and should he happen to be a famous man, then I shall be honoured if I am relegated to the damned—limited or unlimited.

In Chichester I was sent to a dame's school; but I loved the downs and the woods about Kingly Vale more than learning. Then my parents migrated to Lausanne for nearly three years. There I went to various schools, fought little and big Swiss boys; paid twopence at some

fête or other to see a cannibal bite the heads off rabbits; ran several miles to the village of Lutry to watch a murderer have his head off with a broadsword, and, to my despair, arrived there a few minutes too late.

At the age of eleven I travelled back to England alone, and went to a preparatory school in Hampshire, and then, at the somewhat advanced age of fourteen, I passed on to Malvern College. I remained there a little over two years and can frankly say that I detested public-school life. I joined what was called the Army Class, because, my maternal grandfather having wished it, I was destined, outside any inclinations of my own, for the profession of arms. On the Army side I discovered that there was a system of education called "below the line." Why it was thus named I cannot say; but it mainly consisted in sitting at the back of the classroom and educating oneself. A thoroughly sound system, which I made the most of; for given *Bright's Smaller History of England* to study—the dullest book ever written—instead I read *The Three Musketeers*, *Monte-Cristo*, and a large number of other novels, English and French, and by the age of seventeen was so thoroughly well educated in things general and so incapable of passing into Sandhurst, that my parents removed me from Malvern and sent me to "Jimmy's" at 5 Lexham Gardens—there I found life.

Captain James, as he was then, was a remarkable man, as remarkable in his own way as was his competitor, Thomas Miller Maguire. He was small, almost diminutive, as clever as a monkey, not much concerned in cramming, and, at that time, far more concerned in "punting" gold-mine shares. He had some exceptionally able tutors who maintained no discipline whatsoever; consequently their pupils came and went as they liked, and, in some cases, did not come at all. As long as the stock markets smiled on him, Jimmy did not mind what his boys did. Often have I seen half a dozen unconventional young women sitting on the doorstep of No. 5 waiting for

their particular choice, and those were the days when the old Alsatians and Corinthians opened their doors to any lady who could wink and to any gentleman with five shillings in his pocket. Once only do I remember Jimmy losing his temper, and it had nothing to do with being absent without leave. A tall young fellow, Graham Murray by name, was standing in the porch smoking, when Jimmy came along and not liking the look of his pipe tried to snatch it out of his mouth—it was about a foot above his head. Graham Murray, a somewhat aristocratic young man, quietly removed it and, holding it in the air, laconically exclaimed: “Jump, Jimmy, jump!”

How did we ever pass any exam.? I really do not know. Yet I believe Jimmy’s process was a simple one: either he was a clairvoyant or he bought the examination papers from the printers a little in advance. Anyhow, a week before our trials were due, each tutor in turn would issue to his students a list of about a dozen likely questions with their answers in full. When I went in for my Sandhurst entrance exam., all I can say is, that their judgment was unerring. I got at least fifty per cent. of the questions which had been given me, and I had been wise enough to memorise the answers.

In those days the Sandhurst examinations were held somewhere in the cellars of Burlington House, a dismal place, but on our way there through the Arcade we were waved onwards to the inky fray by every arcadian nymph from Ridgmount Gardens to Redcliffe Square. Thanks to Jimmy’s clairvoyance and a good memory, I passed my examination, which was considerably stiffer in those days than now. I remember getting 18 marks out of 500 in Latin and 497 out of 500 in geography (still, I believe, a record), top in history and top in freehand drawing, otherwise indifferent. As regards the drawing, we were given a plate, a knife and an orange, and were instructed to cut the orange in half, arrange it and the knife on the plate, and draw a picture of this outfit. This I found

quite easy, but a boy sitting near me apparently did not. For about five minutes he looked at the orange, passing his hand over his brow. Then he took it up, peeled it, ate it, and left the room. Nevertheless, he passed in high up—if I remember rightly, ninth on the list—and later was sent down from the R.M.C. for being sick into Colonel W. W. C. Verner's lap whilst both were sitting in the College bus. He pleaded having eaten something tough, but the R.A.M.C. said it was brought on by too much fluid.

In 1897, when I entered the R.M.C., the whole atmosphere of that establishment was still Crimean, the Governor and Commandant, Lieut.-General Sir C. J. East, dated from that war, having joined the Army in 1854. What he governed I have no idea, for the cadets saw him but twice a term—when they arrived and when they departed. He was a fine-looking old man, and so was the Sergeant-Major, by name Scudamore, smart, portly, and possessed of a stentorian voice which he was very much in love with. He would bellow out: "Will that cadet stop dancing about like a Columbine?" and the cadet stopped, whoever he was and wherever he happened to be. There were under him several Guards' sergeants, one of them a perfect fiend for smartness; but my drill instructor was of the line and bore the appropriate name of Muddle. He was a dear old man who understood boys and their limitations in smartness, and he was still at the R.M.C. as a Bluebottle when I went to the Staff College as a chief instructor in 1923. Now he has gone, and Sandhurst has lost a very worthy old soldier.

Our work at this centre of learning was even more archaic than it is to-day. We studied Philips' *Manual of Field Fortification* and Clery's *Minor Tactics*, which was nothing like so instructive as Hume's *Tactics*, published years before, and which I read in its place. The first of these two books was illustrated with pictures of redans, gabions, wooden fuses, etc., etc., all of which we copied into green-covered notebooks and painted in every imaginable colour.

I rather liked this work, but why we were called upon to do it I have no idea. Military law was a jest. Once a week for two hours at a stretch we sat in a classroom and read the Manual, and when we had exhausted those sections dealing with murder, rape, and indecency, we either destroyed Her Majesty's property with our pen-knives or twiddled our thumbs. Fortunately our instructor was as deaf as a post, for this enabled us to keep up a running conversation, broken on occasion by a wild Irishman, named Meldon, banging his desk to make our teacher look up. Then Meldon would solemnly say: "Please, sir, may I come and kick your bottom?" And our unsuspecting master, not having heard a word, would invariably reply: "Come to me afterwards, boy; come to me afterwards."

I was only a year at Sandhurst, and on August 3, 1898, was gazetted to the 1st Battalion the Oxfordshire Light Infantry—the old 43rd. The Regiment, for we never called it "the Battalion," was then at the Curragh; but as it was due to proceed to Mullingar early in September, I was instructed to report myself there on the first of that month.

As I drove in a side-car from the station to the barracks my heart rose in my throat. Of all the gloomy-looking buildings, surely the Mullingar barracks were the most prison-like; yet by most of my brother officers this station was adored. There they could hunt cheaply, shoot cheaply and fish cheaply; consequently the conversation was limited to foxes, duck and trout. I soon found myself a monk in a Trappist monastery, because when everyone round you is talking about the same things morning, noon and night, they might just as well be saying nothing at all. I certainly was not one of them, though I did not dislike them, nor do I think did they dislike me. I could not afford to keep a horse—my allowance was not a large one, and my pay, less tax and paid quarterly, was £23 6s. 11d., that is £7 15s. 8d. a month!

For this munificence on the part of my country, for a round twelve months I drilled four hours a day, and three or four times a week indulged in an hour's sword exercise. In the afternoons I would sometimes go out shooting alone, not because I was of an unsociable disposition, but because I looked upon a gun as no more than an excuse to induce one to go out. Further, killing has never much appealed to me; I prefer watching living to collecting dead things. When the weather was too dreadful, and more often than not it was so in Mullingar, I sat in my room and read philosophy. I agree, a most extraordinary thing for a subaltern to do. I have still a book marked 1898, called *The First Philosophers of Greece*, which when picked up by another subaltern so shocked him that he went off to Major Buchanan, the surgeon, to inform him of the fact. Looking through it, I find that against fragment 6 of Xenophanes (p. 67) I wrote: "If a hog could paint, his saviour would be depicted as a sucking-pig," which perhaps shows that that subaltern may not have been altogether wrong. But it was Mrs. Buchanan and not her Major who saved my soul from the crippling dreariness of that miserable little Irish town. She was no longer young, yet still good-looking, and was treated as an untouchable by the officers' wives, because her complexion was not her own. Her tea-parties were always as bright and cheerful as her cheeks. She told us of India, her travels and tribulations—such a relief after the unceasing mess chatter of banks, ditches and tosses.

In the spring of 1899 we went to the Curragh to carry out our field training and musketry on orthodox Brown Bess lines. Even then, though I took no interest whatever in things military, it all appeared to me very ridiculous; yet what did it matter?—we had to fill in time somehow, and what had been good enough for Wellington was good enough for us. There our sojourn passed pleasantly enough; for though daily we assaulted Gibbet's Rath in orthodox fashion, that is to say, in the most suicidal

possible manner, there was plenty of time over for fishing and bicycling around. Then we returned to Mullingar, and, on September 5, left for Crown Hill Barracks near Plymouth.

We had not been there more than five weeks when war was declared in South Africa. I remember the day very well. It was a bright and sunny morning; the Colonel was walking up and down the gravel path outside the window of my room, talking about handing over the Regiment to the Second-in-Command—Major the Hon. A. E. Dalzell. I went over to the ante-room and found that two or three officers had already received orders to report themselves for various duties. Everybody else was envious, because no one expected the war to be a long one. What could the Boers do? They had no army worth talking about. What could they do in face of some 30,000 British infantry? A few days later everyone was dejected when the Adjutant informed us that, though the Regiment had been earmarked as part of the first reinforcements, it was so under-strength that another had been substituted for it. This was the end of all our hopes, for no one, except Sir William Butler, who on account of his first-hand knowledge had been dismissed from the Cape Command, doubted that the war would be over by Christmas. At Crown Hill we remained until November 23, and then proceeded to Oudenarde Barracks, Aldershot, in order to mobilise.

For us mobilisation consisted mainly in de-pipeclaying our equipment. We stained our snow-white haversacks, hid our great-coats and mess-tins in khaki covers, discarded crested regimental bits and white head-ropes, and in our hastily made field uniforms began to look like possible fighting men. In fact an illusion, for our brains we left exactly as they were. We had not been trained for war, we knew nothing about war, about South Africa, about our eventual enemy, about anything at all which mattered, and upon which our lives might depend. We were neither

anxious, depressed, nor elated: we were soldiers; we could march tolerably well, could form advanced and rear guards exactly as our ancestors had done a hundred years before; we could fire volleys, fix bayonets, cheer, and blow whistles; not for a moment did it enter anyone's head that we should be found wanting in this war. Thus, outwardly changed and inwardly the same, on December 22, 1899, we left Farnborough Station for Southampton and, at 4.30 p.m. that day, on board S.S. *Gaika*, we stood out for the Cape.

The two years I spent in South Africa were some of the most interesting in my life. Here I intend to give but a brief summary of them; for though my experiences in that vast and invigorating country have been fully set forth by me in a manuscript entitled *The Last of the Gentlemen's Wars*, it has not as yet been published, and as one day it may see print, it would be a plagiarism here to repeat in any detail its incidents. Therefore, I will summarise them in a few pages, if only to establish a military background to the main event in my life—the war of 1914–1918.

The voyage out was uneventful; the landing chaotic. The Colonel raged up and down the wharf because the baggage which should have been loaded last had been loaded first. Locomotives whistled, Staff Officers cursed, and as the war could not wait for us, eventually we departed for Naauwpoort without our baggage. At Naauwpoort, the normal South African dust-hole, we remained but a few days, and then went on to Thebus, and next, on January 31, to Modder River Station. There, at 6.30 a.m., on February 1, we were greeted by the boom of the first gun most of us had ever heard fired in anger. Ten days later I went sick with what proved to be appendicitis, though such a complaint was known to few at that time. A series of most painful adventures eventually brought me to Wynberg hospital, and as no available accommodation could be provided for convalescents in

Cape Town, for that city was overflowing with officers' wives and concubines, in April I returned to England. The war was over as far as I was concerned, so I thought, but I was mistaken; for, on October 16, I sailed south once again, and at 9 in the morning on November 4, sighted Table Mountain.

From then on until May 31, 1902, when the war ended, my experiences as a soldier may be divided into four periods: sitting on Leeuwoort Kop until March 1901; sitting in Heilbron until the end of June; occupying various block-house lines; and then from December 6 until the end of the war I held an independent command of my own.

As a boy at school I had read scores of penny dreadfuls of the Deadwood Dick kind; yet I had never dreamed that within a few years I should become in a small way a Deadwood Dick myself. On the last of the above-mentioned dates I rode over from our camp at the Lace Mines to Kroonstad and reported myself to Captain FitzH. Cox, the D.A.A.G.(I.).

I was forthwith given a pass, and a very generous one, for it permitted me to proceed everywhere, per anyhow, and time was to be unlimited; it was signed by Captain A. A. Chichester, Assistant Provost-Marshal. I was told that my command would consist of two groups of Kaffir Scouts, one then at Witkop and the other at the Lace Mines; that the first was under the charge of an agent, by name Holland, a Canadian, and the second under another agent—Bethune. Presumably, in order to stimulate my initiative, I was told that the Kaffirs were quite unreliable, and that Bethune, shortly before the war, was employed on penal servitude for illicit diamond buying. When I asked what my duties were, I was somewhat vaguely informed: "To find the enemy, keep him under observation, and report upon him." And as to my sphere of action as an Intelligence Officer, it was anything and everything between the railway and the Vaal, Rhenoster and Vet Rivers. Later on I measured it up, and I found

that its extent was approximately 4,000 square miles, or about two-thirds the size of Yorkshire—not a bad mouthful for a youngster of twenty-three, two white agents, and some seventy Kaffirs who were proclaimed to be quite unreliable.

However, to a boy of that age nothing should be impossible or even appear to be so, and I am perfectly certain that had I been handed over the whole of South Africa to look for Boers in, I should just as readily have accepted the command. Besides, a subaltern has no responsibilities, and also, a subaltern has a very elastic neck.

The next day I set out for the Lace Mines, and there I met Bethune. Here was Deadwood Dick in real life: a squat, dark little man with gleaming eyes, dressed like a brigand except for his khaki jacket, with black drooping moustaches hanging over his chin *à la* Richard Burton. He called me "Lootenant," and the boys, a strange mixture of Kaffirs, Basutos, half-caste Hottentots, and one evil-eyed Bushman, called me "Baas." For the greater part they were the sweepings of Johannesburg and Cape Town. They were mounted on the most miserable collection of Rosinantes imaginable, most suffering from sore backs, for the saddles were in a shocking condition. They were armed with Lee-Metfords, Mausers, Martini-Metfords, Martini-Henrys, a number of carbines and rifles which I had never seen before, and one carried an ancient sword-bayonet, another a lance, and some half-dozen depended for self-defence upon knob-kerries. Six months later, when the war was at an end, every boy in my small command was well if not superbly mounted, had a serviceable saddle, and either a Lee-Metford or a Martini-Henry rifle. This change was mainly brought about by looting; for excepting sheep and a few cattle there was little to be obtained from the veldt.

For nearly six months we roamed over that stretch of country which lies north and south of the River Valsch. At first I sent my scouts out in twos and threes, but soon

I found that this was mere waste of time; for, excepting some half-dozen of them, they could not be trusted. They would disappear over the skyline, dismount, go to sleep, and then eight or twelve hours later would return with some fantastic tale. So I decided to take them out myself, and collecting five good ponies, I led them forth in bands of some twenty at a time. In six months I rode over 3,000 miles.

Having located a commando or a considerable party of the enemy, I would wire in the information to Kroonstad, and if there happened to be a column of our mounted troops in the neighbourhood, it sometimes happened that it was sent out to bag my find. On these occasions I generally provided the guides and joined the column with a small commando of my own.

Having entered thus far into my work as an Intelligence Officer, I will extract one incident from *The Last of the Gentlemen's Wars* to show that, unimportant though it may have been, it could be quite exciting at times; it was a raid we carried out on a group of farms called Schotland West, on February 23, 1902.

At this time my Headquarters were at Bothaville, then held by a Battalion of the Welch Fusiliers, to which for the time being had been attached a column of South African Constabulary, commanded by a Captain P. G. Reynolds. On the 22nd I had carried out a night-raid on some farms in the Damhoek area, and had been fortunate enough to take 3 prisoners. From them we learned that a commando of 93 men, under Kritzinger, was at Leeuwkuil, that 80 men, under Harman, were in the neighbourhood, and that a third party, under Nagel, strength unknown, had crossed the railway from the east on the night of the 17th. On my return I passed this information to Reynolds, who thereupon decided to move out that evening and attack Kritzinger's commando at dawn the following day.

At 4.30 p.m. we started, for we had a considerable distance to cover. We crossed the Valsch and struck along

the track which leads over Verlaat Spruit and Tweefontein. We searched the farms on Damhoek and found them clear; but at the Kraal the Kaffirs, who were in my pay, told us that Kritzinger had moved to Schotland West. At the time I had with me a scout named August, whom I had recruited from this very kraal, and the information we had obtained had come from his sister, who was acting as cook to Kritzinger; she also was in my pay. As August knew the tracks in this part of the country, I now ordered him to guide us; then on we ambled. In all, my scouts, who were leading the advance, surrounded twelve farms, the S.A.C. not much liking this work—always rather risky. As to men, we found no traces; of women there were a few, besides numerous children, and from them we gained a certain amount of information.

The last farm we visited was Schotland Noord; there we found two youngish fat women and several small children in one immense, indescribably filthy bed. Quite rightly, from their point of view, they would not answer our questions; but one, getting annoyed, suddenly said: "You will very soon be for it!" which was all the information we needed: obviously it meant that the enemy was not far off.

When we looked round the outside of this farm, we discovered that a considerable force of Boers had been there that night. They must have left shortly before we arrived—a good hour before dawn. From the farm the trail struck ery strong, leading southwards towards the high ground of Kopje Alleen. At five, as dawn was breaking, Bethune, who was riding alongside me, suddenly pulled in his horse and said, as he pointed to the skyline about Paradys, south of Schotland West: "There they are."

Gazing through the twilight, at first I could see nothing, then I noticed on the high ground a small smudge of darkness creeping eastwards. "How many of them?" I asked, and he answered: "About a hundred." "Can they see us?" I said. "No," he replied, "not in this low ground, but they will in a few minutes." I rode up to

Reynolds and pointed out to him the Boer force, and as I did so, I noticed, about a mile and a half ahead of it, another moving smudge which I estimated to be eighty to a hundred Boers.

Reynolds at once cantered forward, and a moment later the leading half of his small column opened out and galloped for the second of the two commandos in order to head it off from the Kopje Alleen area, which is a natural fortress. What his orders were I did not pause to ask; my work was done, so I and my scouts joined in the chase.

As we shortened the distance between ourselves and the enemy, they began to dismount and fire. We did the same. At one time, when the range was about 1,200 yards, a wire fence separated the contending forces and a regular dismounted action took place. The firing was heavy and the bullets were hitting the ground around us, yet so far as I could see no one was hurt. Shortly after this my pony began to lag behind, so I joined up with some stragglers. Avoiding a farm on my left, from which shots were being fired, I pulled him up to give him a blow, when suddenly on my right came the crack of a rifle; then a score opened fire.

On looking round and seeing what appeared to me to be some S.A.C. on our right, I turned to a S.A.C. Corporal, riding on my left, and shouted: "I suppose those are some of your bloody fools!" As I did so he received a bullet through his hat. Then I realised that the firers were not S.A.C., but Boers wearing our uniform. A moment later a scout's pony on my right was shot through the mouth, then two S.A.C. men close by me were shot, both rolling out of their saddles.

The Boers on our right were not more than 400 yards away, when, as I galloped along, suddenly, to my horror, I came face to face with a small boggy spruit—a chain of deep pools of water. Turning my pony's head to the right, I galloped some fifty yards towards the enemy and then swung him to the left, cleared the spruit between two

pools, and as I did so I heard from behind me the tac-tac-tac of a machine gun. Glancing over my right shoulder, I saw two or three of the dismounted Boers fall and the rest rush back to their horses.

Straight ahead I joined up with the main force of S.A.C., and just in time to see two Boers run down. One was being chased by Lieutenant King of the S.A.C. The Boer was brandishing a revolver, when King, jumping from his horse, raised his rifle and brought him down at the first shot. His name was Scholtz; he was hit under the heart and died fifteen minutes later.

The other was a young fellow chased by two S.A.C. men. Though his pony was dead beat, he would not give in, and one of the troopers, fixing his bayonet and using his rifle as a lance, charged down upon him and struck him in the side, whereupon he rolled to the ground. In a second he was up again and, refusing to surrender, the other S.A.C. trooper, who had also dismounted, clubbed his rifle and hit him a tremendous blow on the back. At first I thought that he had killed him, but he was only winded and soon recovered, and when we examined him we found that the bayonet had but grazed his skin.

By now our ponies were completely done up, so I and my scouts started walking back towards Schotland West. On coming up with our three Cape carts, which represented our baggage and supply trains, I found that when we first set off on the chase, it had been Reynolds' intention for one-half of his force to make a dash at the Boer commando on our left front, which turned out to be Harman's, to hold back the other half, and induce the Boer force on our right front, which was Kritzinger's, to sweep round the rear of the first half, and then with the second half to attack him in flank. Apparently, what had actually happened was, that as Kritzinger's men were dressed in khaki, the second half of the S.A.C. mistook them for part of the first half and galloped past them, and it was these men who had suffered the casualties. Meanwhile, under cover of his

uniforms, Kritzinger not only engaged them, but detached a small force to seize the Cape carts. Whereupon Reynolds, realising what was intended, galloped back, mounted his solitary Maxim gun on its tripod (a novelty at this time) and drove them away.

Back at Schotland West we dismounted, off-saddled, threw out our outposts, and rested until the evening, when, like Xenophon, under cover of our camp fires, we set out to return to Bothaville. I remember that ride well enough, for both I and my little pony were asleep every three seconds out of five and then awake for two. Thus we stumbled along until eight the next morning, when Bothaville was reached. I had been up three nights and two full days, and in the space of forty hours my pony, a good deal less than thirteen hands high, had covered some 136 miles.

Such was the life I led during the last six months of the war, and though in May I knew that the end was approaching, when, at eleven in the morning, on June 1, I heard that peace had been declared, I exclaimed: "Well, I am sorry"—and so I was.

On June 30 I rejoined my Regiment and found drill and musketry in full swing, and most that had been learned during the war already forgotten. We lingered on in South Africa until September 13, when we sailed from Cape Town for home, disembarking at Southampton on October 4, and from there proceeding by rail to Chatham, where we arrived in a drizzling rain.

Of all the evil places for soldiering, whatever form it may take, surely Chatham is one of the worst. It is a sordid town, and, in 1902, it was full of sordid women against whose low animal natures discipline was no more than a paper shield. For the officers it was but a degree or two better; yet there was little to do except go up to London to racket and riot. I have still a letter in my possession, written by a brother subaltern, which gives a fair picture of the daily or rather nightly routine of this

period. It is dated June 22, 1903, and apparently the writer was returning from London to Chatham by the 5.45 a.m. train, though how he managed to catch it he does not say. He writes: "I have never felt nearer death. I don't remember leaving that — place. The last thing I can recollect of it was nearly dying of laughter at Mr. Mugg repeatedly calling some poor lady 'a — thief.' The next thing was finding myself in a third-class compartment at Bickley. A burly navvy was sitting at one end and my opera hat was dustily reposing on the floor. The combined efforts of the navvy and the guard failed to convince me that I was travelling anywhere but to London. The guard seemed quite triumphant when he came to inform me: 'Next station Chatham, sir,' etc., etc."

A year of this kind of life was about as much as even the 43rd could stomach, and we all heaved a sigh of relief when, in the early autumn of 1903, we sailed for India to relieve the 52nd.

India I liked in a way, but a way entirely my own. Sport never obsessed me as it does most soldiers. What attracted me was the strangeness of the land, and to unveil it I not only read a number of books on India, but, through the good services of my munshi, became acquainted with its people. I met holy men, yogis, advanced radicals, for it would be a mistake to call them revolutionaries, and various members of the Arya Samaj. I studied the *Vedas* and the *Upanishads*—in translations, of course—and took a deep interest in the Yoga philosophy. I soon discovered that, once its mystical jargon is set aside, it is little more than a system of self-control: the control of the body, of the instincts, and finally of mind and of soul. After a little practice I found it quite easy to cut out noises at will and to remain cool and collected in any set of circumstances. I make no claim to having been thrown into ecstasies or to have attained to supernatural powers; but having experimented with Yoga, what I do claim for it is: that intellectually it enables one to maintain a sense of

proportion, and so release oneself from the thralldom of trivialities. It may be much more, yet this alone is no mean recommendation.

Of the country I did not see much. First, the Regiment went to Umballa, and in the spring of 1904 to the Simla Hills, my Company being stationed at Sabathu. From there I attended a course of instruction at Rawalpindi, rejoining the Regiment at Lucknow, to which station it had meanwhile moved. There, in the autumn of 1905, I went sick with enteric fever, which proved to be a record case. I had a high temperature for seventy days, during the first twenty-three of which I was delirious. Not until April, the following year, was I fit to leave hospital, and then I was ordered home on a year's sick leave. I travelled to England with a brother subaltern, a man of weight if not of skill; for late one night, returning on his bicycle from the Chhattar Manzil Club, apparently not seeing it, he pedalled straight into the garrison church. What happened to that sacred building is not recorded; but, so far as he himself was concerned, he broke his ankle, and the medical authorities having set the bones in some unconventional way of their own, he was sent back to England to have them reset in a recognisable fashion. He was a curious character, besides being remarkably unsoldierlike in appearance. His hobby was to order dinner for two and then dine alone, which more than once ended disastrously. Having been presented with the compliments of the Colonel on several occasions, a few days before he charged the church, when this exalted officer sternly rebuked him and said: "Now, Mr. —, what have you got to say?" he forthwith replied: "God hates me; that's the end of it"—which completely winded the Orderly Room.

Out of evil comes good, and were this not so, I suppose the human world would have vanished long ago. Anyhow, my escape from death—and it was a very near one—was a stepping-stone to a new life, for I met Sonia and we fell in love. Such love story as exists is for us and not for

others. We were married in December, and hand in hand we have faced the ups and downs of life bravely, I trust; anyhow, with complete confidence and faith in each other.

This change in my life led to the next. I decided not to return to India; consequently, I applied for the Adjutancy of the 2nd South Middlesex Volunteers. My first difficulty was to persuade the medical board, which soon I should have to face, that I was again strong enough to be passed fit for general service. To appear sound, which, in such cases, is quite as important as to be sound, I and Sonia went to Osborne. Next came the board, and as I had by then learned that the Adjutancy would be mine were I pronounced fit, this helped to make up the minds of its members, for general service would in my case mean service at home. So it happened that, in April 1907, I was once again on my own; for in those days a Volunteer Adjutant was to all intents and purposes king of all he surveyed.

That summer we went into camp on Salisbury Plain, the last annual training the old and much-neglected Volunteer Forces ever held; for the next year the Haldane reforms metamorphosed them into the Territorial Force. But what agitated me most was that certain units, including the 2nd South Middlesex, were abolished; the 2nd South being amalgamated with another Battalion, the two being dubbed the 7th Middlesex. The result was that for several months there were two Commanding Officers not on speaking terms, and two Adjutants who worked very well together, but obviously one was redundant.

Some time in June, if I remember rightly, the War Office threw out a tentative suggestion that, if the men were forthcoming by a certain date—I have a vague idea it was July 31—a new Middlesex Battalion might be considered. Further, I remember talking this over with two of the 2nd South Middlesex officers—Captain Cheese-

wright and Captain Jeans. The first thing to do was to find a Commanding Officer, and the second was to enlist 300 men by whatever the date happened to be, otherwise the unit would not be recognised. It was, I think, Cheeswright who found the first—a retired Grenadier Guardsman, Captain A. St. L. Glyn, and the second problem was in the main solved by myself. As we were not allowed to recruit in London, and as 80 per cent. of the men we knew lived and worked there, the problem was solved by collecting them in Putney, taking them out to the first lamp-post in the county of Middlesex, and attesting them under its glimmering light. Thus by the date laid down we numbered some 400 in all.

Our first Headquarters were a small room in Turnham Green Town Hall, and though the musketry season was far advanced and the men were without rifles, I determined that they should fire their musketry course. From somewhere or another I borrowed thirty rifles, sent them down to Bisley, and each Saturday in batches the men went down there to fire. The somewhat astonishing result was that the next year, 1909, the 10th Middlesex was top in musketry out of all the Territorial Battalions in the country.

My Adjutancy I enjoyed immensely, as the 10th became a first-class unit; besides, I had plenty of time to myself to do what I liked in. In fact, at this time, I did not realise that, though I had never been, in the strict meaning of the word, a "professional" soldier, I was now incapable of becoming one. I was thirty-one, and what with my freedom as an Intelligence Officer in South Africa and my freedom as a Territorial Adjutant, I was completely spoilt professionally. Suddenly, I realised this, and it happened whilst on a visit to Folkestone during the summer of 1911. The Second Battalion of my Regiment was then stationed at Shorncliffe, and on one exceptionally hot day I was standing not far from the Martello tower overlooking Sandgate Hill, when along marched the 52nd in full war paint. Somehow the sight of those decked-out,

sweating men horrified me. Mentally I looked round for some avenue of escape, and in an instant I decided to work for the Staff College.

I started forthwith on my own, not very seriously, but sufficiently so as to have a trial run the following year, when my appointment as Adjutant would be at an end. Quite expectedly I failed. Then I joined the 52nd as a Company Commander, again went up for the examination in 1913, and this time passed. By then I had learned a secret which may be useful to others. It was, that success does not so much depend upon what you know as upon what the examiner knows, and this can in many cases be gauged from the nature of his questions. If they are pernickety, be pernickety; if common sense, then be common sense. Again, and unfortunately, I discovered this too late: do not study in order to fit yourself to become a Staff Officer, but solely in order to pass the examination. Abide rigidly by the manuals and regulations; do not read books which are of value, but instead crammers' productions; for the average crammer is no fool. He knows to an inch the mental measurement of the normal examiner; that is why, for practical education, their cram books are totally valueless.

In a way I regretted leaving the 52nd. During the summer I had held the appointment of Brigade Machine Gun Officer to the 5th Infantry Brigade, then under the command of Brigadier-General R. C. B. Haking. I had become a great believer in machine guns; in fact, I had gone so far as to suggest in my report that, when machine-gunners were drafted from home to India, they should be kept as machine-gunners, and not be reconverted into riflemen. But this was too much for the Director of Military Training, who replied that, "No weakening in the number of bayonets in a Battalion could be contemplated." Yet this officer was one of our most learned soldiers. A few months later I met him at the Staff College, and to-day the only thing I can remember him

saying was: "Yes, indeed, in the next war we must expect very heavy casualties"—but why "must"?

On the last day of 1913 Sonia and I moved to Camberley, and three weeks later the students assembled and I started work. To describe what it consisted in would be tedious, so instead I will substitute for it what my outlook on war was at this time; for though nothing very exciting will be revealed, it does constitute a definite link in my life-history.

Prior to my becoming a Territorial Adjutant I had taken no interest whatever in soldiering; in fact, it seemed to me to be intensely boring. Then I began to study it sufficiently for my Territorial work, and it was at that time that I wrote two small books, both later on published; they were *Hints on Training Territorial Infantry* and *Training Soldiers for War*. Next, whilst at Aldershot, during 1912-13, I wrote several articles for *The Army Review* and *The Journal of the Royal United Service Institution*, including one on the mobilisation of a Territorial Battalion and another called "Notes on the Entrainment of Troops to and from Manœuvres," both of which were in considerable demand in August, 1914.¹ But the two articles which I look back upon as really worth while were "The Three Flag System of Instructing Infantry in Fire Tactics"² and

¹ My paper on the mobilisation of a Territorial Battalion was made out for the 10th Battalion the Middlesex Regt., and was published in *The Army Review* of July 1913. A little later on it appeared as a pamphlet. The paper on entraining was based on experiences I gained during 1912 and 1913, when I acted as R.T.O. to the Aldershot Command before and after the Army manœuvres held during those years. As far as I know, it was the only practical thing published on the subject. It appeared in *The Army Review* of July 1914.

² This article appeared in *The Army Review* of January 1914, and was after the declaration of war elaborated into a pamphlet. With reference to it, I received a letter from Colonel W. Western, addressed from Headquarters No. 8 District, Exeter, and dated July 28, 1914. It read: "Dear Captain Fuller,—At the conclusion of the training of the Special Reserve Battalions, for whom I am responsible, I should like to express to you my indebtedness for your article in January's *The Army Review*, on the three flag system of instructing infantry. Your contentions were fully borne out in the six Battalions adopting the flag system. There was another great advantage the flag system possessed: one could kill any endeavour one saw on the part of officers and section leaders to become stereotyped in their methods of fire or advance. I am glad I had an opportunity of drawing the attention, in the field, of both the Adjutant-General and the Inspector of Infantry to your system."

It must have been on account of this that it was used in the training of many units during the war.

“The Procedure of the Infantry Attack.” In the first I evolved a system by means of which the effect of fire could be introduced on the training-ground, and in the second I advocated advances in single files in place of in section lines. From this it will be seen that I was thinking outside the then existing regulations, and so I continued to do at Camberley.

Of the various schemes and papers I wrote at the Staff College between January 1914 and the outbreak of the World War, three only have survived the ravages of many removals. The earliest, written in April 1914, and called “The Tactics of Penetration,” is the most interesting, and in November 1914 it was published in the *R.U.S.I. Journal*. The second was a paper on lessons learned at Artillery Practice Camp, Larkhill, May 2-9, 1914, and the third a paper on a comparison between the battles of Salamanca and Chancellorsville.

In the first my main contention was that tactics are based on weapon-power and not on the experiences of military history, and that as in 1914 the quick-firing field gun and the machine gun were the two most recent weapons, our tactics should be based upon them. I wrote: “The commander who first grasps the true trend of any new, or improved, weapon will be in a position to surprise an adversary who has not.” Then with some audacity I added:

“Realising this, we can predict with absolute certainty that the general who makes the truest use of these weapons, that is, so deploys his men that their fullest power is attained, will win, unless he is hopelessly outnumbered. If this general further devise a system of deployment which will not only accentuate the power of these weapons, but also the defects in his opponent’s formation, he will win irrespective of numbers, as surely as 1,400 Swiss beat 15,000 Austrians at Mortgarten, and as surely as 90,000 Austrians were beaten by 33,000 Prussians at Leuthen. This is a certainty.”

Having set down this somewhat bold generalisation, I turned to the field gun and said: "This gun, if correctly employed, will, I feel, revolutionise the present theory of war by substituting as the leading grand tactical principle penetration for that of envelopment [a heresy]. And why? Because the quick-firing field gun is now the master missile-throwing weapon. . . ." Then I gave my reasons for this statement and continued:

"To-day, on account of the rapidity of fire of the modern field gun, there will be no necessity either to hold back guns in reserve or to withdraw them from their positions, for all that will be necessary will be to mass ammunition opposite a definite point, or a topographically weak point, or a point which has become, or is likely to become, a decisive point, so that the guns commanding this point, few or many in number, may pour a continuous and terrific deluge of shells on this point, and so enable the decisive attack to proceed against it. Admitting that this is feasible, then the problem resolves itself into one of supplying these breaching batteries with sufficient ammunition; this problem should not be a difficult one to solve now that motor transport is in general use."

Turning to the second new weapon, I wrote:

"The machine gun is a nerveless weapon. Its fire is consequently more accurate than that of the rifle. Its volume of fire is enormous, and is entirely under the control of one man, consequently it can be diverged to right or to left at will, whilst rifle fire from men in action can only, as is well known, be directed to their front.

"There is as much difference between machine-gun and infantry fire to-day as there was between light infantry and heavy infantry fire a hundred years ago. So great is this difference that we might almost say, that the light infantry of the future will be evolved from the machine-gunners of the present. That is, that the assaulting column of the future will be flanked by these terror-

spreading weapons, and that these new light infantrymen, like the old, will not only precede the assaulting column by working up close to the line of the holding attack, but will flank it on both sides, producing a somewhat similar effect on the hostile line as grape, canister, and case shot did during the first fifty years of the last century."

From these extracts, two things will be seen, namely, that at this time I was in no way cramped by the official doctrine, and that my outlook on war, however crude it may have been, was realist and futurist. I recognised terror as a "weapon," and elaborated my future tactics from the newer and more powerful weapons. The two diagrams (1 and 2)¹ show clearly what was in my mind, and incidentally very much what was attempted, but too late, in 1915-17. That I miscalculated the holding power of the enemy is true; yet my theory was far nearer to reality than that taught at the Staff College.

In conclusion I proclaimed somewhat challengingly:

"I have no doctrine to preach, for I believe in none. Every concrete case demands its own particular solution, and for this solution all that we require is skill and knowledge, skill in the use of our weapons, knowledge of our enemy's formations.

"A physician who is slave to a doctrine, as was the famous Doctor Sangrado in *Gil Blas*, ends by killing his patients; a General who is under the spell of some such shibboleth as the oblique-order, envelopment, penetration or the *offensive à outrance*, ends by destroying his army. There is no difference. If there is a doctrine at all, then it is common sense, that is, action adapted to circumstances.

"I do not lay down that I am right in basing my proposed deployment for penetration principally on the power of quick-firing artillery; but all I can say is this: that a careful study of past and present history has led me to the following conclusions:

¹ See end of book for diagrams.

“(1) That weapons when correctly handled seldom fail to gain victory.

“(2) That armies are more often ruined by dogmas springing from their former successes than by the skill of their opponents.”

This essay was frowned upon by the gods. I was told bluntly enough that, though I had taken much trouble in writing it, I should have occupied my time better had I more intelligently studied the *Field Service Regulations*. That in them I would find that envelopment and not penetration was the doctrine laid down and, further, that infantry was the decisive arm, and not artillery.

When this essay was written, I had never been to an artillery practice camp, and though I was now in my thirty-sixth year, I had not as yet seen a battery of guns fire as a battery. Nevertheless, I had been told again and again that the success of an infantry attack depended upon artillery co-operation. Between May 2-9 came my opportunity, for the Junior Division, to which I belonged, was sent to Larkhill, Salisbury Plain, to attend the practice camp of the artillery of the 4th Infantry Division, which was then commanded by Brigadier-General G. F. Milne, or “Uncle George,” as he was commonly called. To me the work carried out there was an eye-opener, and in the paper I wrote on this visit I said:

“. . . to put the whole matter in a nutshell, since the introduction of quick-firing artillery, it is as much the duty of the infantry to co-operate with the artillery as it is for the artillery to co-operate with the infantry. It is no longer a question of the infantry moving from A to B and the guns covering their advance; but that, as B is tactically and topographically suited to the maximum development of artillery fire, therefore the infantry will attack it. . . . Further, to obtain full value from the aeroplane reconnaissance, the observer must be a highly trained artilleryman. So much so, that it appears to me that special aeroplanists

will have to be trained for artillery observation, and that these and their aeroplanes will have to be allotted to those guns detailed to carry out the decisive artillery attack."

In a way it is strange that I, an infantryman, and a light infantryman at that, should in theory have become so firm and pronounced an artillerist. But the explanation is really simple: my reading of philosophical and scientific works had unconsciously taught me to think clearly and to accept nothing of importance without examination. And from a close examination of *The British Officers' Reports on the Russo-Japanese War*, I had come to the conclusion that the rifle was now the secondary arm.

I concluded this paper as follows:

"The leading lesson which I learnt whilst at this camp only accentuated what reading had already led me to suppose, namely, that artillery is to-day the superior arm, and that, consequently, battles will become more static, i.e. entrenched. That its power is so great that the infantry assault will be chiefly rendered possible by the demoralisation of the enemy by means of artillery fire. This logically leads to penetration in place of envelopment as the grand tactical principle of the attack, because freedom of manœuvre will be limited by wire and field works to an enormous expenditure of ammunition at the decisive point, and to consideration whether a special motor ammunition column should not be formed to supply alone the guns taking part in the decisive artillery attack."

All this was rank heresy, for, according to our teachers, the gun was not the decisive arm; entrenchments were not to be contemplated in the attack, and penetration was in no way to infringe the doctrine of envelopment.

My last paper, and one of the last I must have written

and received comments on, for it is dated July 9, 1914, was equally heterodox. On the first and second pages of the *Field Service Regulations* (1909 edition) I read: "The fundamental principles of war are neither very numerous nor in themselves very abstruse, but the application of them is difficult, and cannot be made subject to rules. The correct application of principles to circumstances is the outcome of sound military knowledge, built up by study and practice until it has become an instinct." Here was something worth while knowing, and this vitally important knowledge depended on the key—the principles themselves. Yet not one was mentioned: what were they?

This had perturbed me in 1912, and to discover them I turned to the correspondence of Napoleon, and came to the conclusion that they were as follows: "The principle of the Objective—the true objective being that point at which the enemy may be most decisively defeated; generally this point is to be found along the line of least resistance. The principle of Mass—that is, concentration of strength and effort at the decisive point. The principle of the Offensive; the principles of Security, Surprise and Movement (i.e. rapidity)." So I wrote in my little book *Training Soldiers for War*, which was written in 1912-13 and published in November 1914. Now at the Staff College I applied them, and in my paper on Salamanca and Chancellorsville they appeared to work like magic, because they kept criticism on logical lines and supplied a skeleton to the illogicalities of war. Unfortunately they were not in the *Field Service Regulations*, therefore they were incorrect. I enquired what were the correct ones; they must exist somewhere, because it was stated that they were neither very numerous nor abstruse. I was told that it was not the business of a student to amend that book, but to study it.

It must not be thought from this that our instructors were complete idiots; they were not. They were just parts

of a machine created to produce standardised thinking, and to think in a standardised way is a great relief to an instructor, for otherwise he might be caught out. What would have happened to me had I lived out the full two years of the Camberley course I cannot say. But this was not to be. First, there was the Irish question which divided the students of my Division into two bands: those who would do whatever they were told, and those who intended to resign their commissions in the event of the coercion of Ulster. I should probably have joined the second lot, not because I was a friend of Northern Ireland, but because I had spent a miserable year at Mullingar, and I could not imagine anything worse than being ruled by Southern Irishmen. However, this was not to be. In 1909 and 1911 Sonia and I had spent our leave in Germany, and in 1914 we were going there again, but towards the end of July we began to doubt whether we should be able to get away. On August 1, or thereabouts, every student who owned a horse was ordered to parade, as next day all private horses were to be sold to the Government. This looked like business, and it was, for I sold mine, a small bay mare, for twice the price I had paid for her. Then we received our mobilisation instructions, and mine informed me that, in event of war being declared, I was to report myself as an Assistant Embarkation Staff Officer to the Embarkation Commandant at Southampton. All leave had, of course, been cancelled, yet since July 31, the summer term having ended, we were on a pseudo-holiday. We strolled about the grounds and gathered in small groups in the mess. Some thought there would be no war, others that war was inevitable. Then came August 3, and several students were called away on special appointments. I remember meeting one student's wife in the post office. Her husband was a Marine, and she was a very attractive woman. As I entered, she, in a flood of tears, called out: "He's gone, he's gone, he's gone off!" Thinking of something quite other than the war, now in its

initial stage, I replied: "With whom?" I thought he had deserted her; but no, he had gone off to his ship. That evening we heard that Germany had declared war on France. Then next day that her troops had entered Belgium, and lastly, a little before midnight, that we were allied to France and at war with Germany.

CHAPTER II

IS THIS WAR ?

ON August 5 we students just disappeared. There was no rush or excitement; we simply melted away. Mobilisation had begun, and the War Office preparations were so thorough that our small Regular Army, its reserves, equipment, horses and stores, resembled as it were the parts of a wound-up clock: all that was necessary in order to set them in movement was the shake of a telegram; then they ticked out perfect military time.

That morning I ordered a four-wheeler to convey my kit to Farnborough, from where, nearly sixteen years before, I had set out for South Africa. As I could not get my bicycle on it, Sonia and I pedalled away in advance, were caught in a storm of rain and arrived at the station like drowned rats. There she bade me a temporary farewell, and I went on alone to Southampton to report myself to the Embarkation Commandant and take over my quarters in the South Western Hotel.

That evening the whole of the Staff had assembled: a curious collection of officers, some dozen students from the Staff College and some thirty dugouts, half naval and half military, and for the most part old enough to be fathers of the former. I remember well one little old man of about sixty, possessed of a high sense of humour, and who spoke in a quiet and confidential way. He approached me whilst a Staff College student was drawing the sailors by talking of stern-castles and fore-castles, and was asking them what was the difference between a cog and a carrack, a barge and a balinger. He introduced himself as Major Maclean, a brother of Kaid Maclean, of Morocco renown. He said: " You know, I'm a very old man, a very, very old man ;

they call me a dugout, but the War Office absolutely mined me out. When I went to them to report myself, they said: 'What is your rank?' I answered: 'Well, well, it is so long ago that I have forgotten it'; thereupon they replied: 'In that case you had better be a Major.' So here I am." In spite of his age, Maclean was a very live wire.

The next day we walked over the docks, miles and miles and miles, and after lunch Colonel A. G. Balfour, the Assistant Embarkation Commandant, said to me: "I hear you wrote something on entraining and detraining troops, so would you be D.A.D.R.T.?"—which means Deputy Assistant Director of Railway Transport. I answered, "Of course," and then walked over to my office, which a day or two before had been occupied by officials of the North German Lloyd. There I met Major L. G. T. Stone, a comparatively young dugout, who had served in the Royal Fusiliers, and who, if I remember rightly, had been recently engaged in running guns into Ulster. Stone was one of the most competent soldiers I have ever met.

Having introduced ourselves, I looked at the office table, for on it was a board about two feet square with little slips of wood the size of narrow rulers, which could be pulled out and pushed in, and upon which small coloured labels could be pinned, each representing a train-load of troops. Curiously enough, I had seen it before, and knew exactly how to work it. It was the invention of a Sapper, Major A. M. Henniker, who, when I was stationed in Aldershot, had a house immediately opposite mine. Often had I in the evenings called in on him to play about with this simple sorting machine, which, in fact, became the brains of all my work. Looking back on that period, so far as my railway duties were concerned, it was most fortunate that I had been selected as a R.T.O. (Railway Transport Officer) during the Aldershot manœuvres, not because I had gained much experience, but because I had come into contact with the officers who were responsible for the bulk of the railway mobilisation arrangements. Coupled with

Major Henniker's movable graph, or whatever he called it, this fact above all others led to the smooth working of the detrainments.

Stone and I next went up to the office of Captain H. Stansbury, R.N., who was in charge of the actual embarkation work, and I soon found him to be a highly efficient officer, who had a way of making his elderly naval dugouts skip about like cabin boys. From that moment we established a firm *entente*. Then we went over to the station and looked up the stationmaster and traffic manager, without whose assistance we could do nothing, and which they gave us from that moment onwards in a way which can be truthfully called heroic, for no trouble was too great for them. Lastly we examined the line: here was the bottleneck of all our forthcoming work. A single set of railway irons connected the station with the docks. Even in normal times it must have been exceedingly inconvenient, if not dangerous; but now, what was our problem when taken at its peak? To move a full train-load of troops into the docks every four minutes, and to move an empty train out in an equal space of time. This meant 240 seconds each way and over a considerable stretch of single line. Though, in my capacity as D.A.D.R.T., I was the responsible officer, I take no credit for what eventually took place; for the credit rightly belongs to the London & South Western Railway officials at Southampton and to the engine-drivers and guards of the innumerable trains. All that my duty consisted in was to manipulate Henniker's machine, get out forms showing to which wharf each train-load of troops was to proceed, and, last and not least, act as a water-tight compartment between the railway officials and the soldiery; in fact, to protect them from military interference. The result was remarkable, for during August we had to deal with hundreds and hundreds of trains coming from every part of the kingdom, and in one period of some twelve hours eighty, and yet there was never a delay, never a mishap, and when the first six Divisions

had left this country, the sole casualty was one horse killed—it kicked itself out of its slings whilst being embarked.

Though oddments began to arrive on the 6th, it was not, if I remember rightly, until the 9th that the rush began, and then it lasted for several days. Next a lull, then another rush, and so on as new Divisions were formed and reinforcements collected. The only potential muddle, though it never developed into an actual one, was when a Division (I forget now its number) in camp at Beaulieu was due to arrive by train. It was divided up into train-loads: then its trains were cancelled and it was ordered to march to Southampton, and instead of marching by units, it marched by train-loads. As for disembarkation purposes this was very inconvenient, for it meant the splitting up of units, I remember collecting all the military dugouts at the dock entrance and handing over to each a batch of Boy Scouts to act as guides. Then, when the Division marched in, the number of each train-load was shouted out and a guide allotted to lead the "load" to its ship. I think that this was the most strenuous day I ever spent. Small columns of men were criss-crossing about the docks in every direction; nevertheless, somehow or another they all got on to their ships as units, which saved them a deal of trouble when they disembarked.

Immediately after the first rush was over, I left the South Western Hotel, for by then it had become a veritable beehive, and Sonia joining me, we went into rooms close by. However, so far as I was concerned, it did not matter much, for at this time I was too busy even to read the newspapers.

Sometimes events were amusing, sometimes annoying and sometimes pathetic. I remember when the Oxfordshire Hussars embarked, they brought with them a vast quantity of kit: tin uniform boxes, suitcases and cabin trunks, as if they were on their way round the world. Someone questioned the loading of this baggage, where-

upon a red-faced Major burst into my office in a towering rage: "This is simply damnable!" he shouted. "Winston said we could take 'em, and now one of your prize B.F.s says we can't. . . ." "All right! All right!" I cut him short. "What is the trouble about?" And having ascertained what the First Lord of the Admiralty had sanctioned, I telephoned down to the A.E.S.O. in charge to load the officers' trousseaux—a word which did not seem to please my furious friend. All were loaded, and, I believe, a week later were unpacked by German hands.

No sooner had he left the room than in burst a Hussar Captain. He also was boiling over with anger. He stuttered and had a high-pitched voice: "Do you expect that *I* am going to get on *that* old barge?" (the *Archimedes*, a cattle-ship, later on torpedoed). "Why," he continued, "there is no notepaper on board." "Yes," I replied, "that is so; for, since the outbreak of the war, Argentine bullocks have been considerate enough to do without it. May I, however, give you a tip—well, they have dispensed with toilet paper also."

A strange incident was one in which Major Maclean played the part of fairy godmother. It happened on the day upon which the Beaulieu Division marched in. As was often the case, a howling crowd of friends and relatives collected outside the dock gates. An elderly woman was demanding to be let in, and by her side was standing a girl literally dripping tears. Maclean, always good-natured, allowed the two women to enter, and then discovered that the girl was expecting a baby, and that the culprit, a Sergeant, was somewhere in the crowded docks. Pacifying her, Maclean said: "You leave it to me; it will be all right," and off he went. Three-quarters of an hour later he came back with the Sergeant: how he found him remains a mystery, for there must have been some twelve to fifteen thousand troops embarking or embarked. Then he took the Sergeant and the girl into the door-keeper's hutch, which stands just inside the gates, and making them sign

some document which he hastily concocted, he married them in Scottish fashion. When later on someone chipped him and said: "Well, that's not a legal marriage," he replied: "No—but now it is a very good case for breach of promise." And I am inclined to think that he was right.

The most serious trouble occurred in the very height of dispatching the Expeditionary Force. All was going well: the trains coming in to the second, the troops behaving splendidly and the dugouts exerting themselves like three-year-olds, when suddenly the whole of the stevedores struck for higher pay. We had, of course, no power to raise their wages, and in any case an official settlement would have taken days. General A. B. Hamilton, the Embarkation Commandant, called me into his room. He could do nothing, neither could Captain Stansbury; the stevedores were under the control of the Chief Wharfinger, and he had the reputation of being a flaming Socialist.

I knew him, and he certainly was no soldier's man. The General disliked him, because in his conversation he omitted the use of military ranks, called officers by their names, "'Amilton," and so on, and above all did not remove his hat when he entered their offices. Personally, I had a sneaking respect for him, and so long as the ships were loaded to time, I did not mind if he called me Beelzebub or Saskatchewan, or whether he came into my office wearing a bearskin or a cooking-pot. As to his political persuasions, they did not concern me; I knew he was a man, and I felt that he was somewhat vain of his authority. So I said to the General that I would see what I could do. "Do?" he replied. "What can *you* do with a man like *that*?"

I sent for him, and as usual he came in with his hat well over his ears. I asked him to sit down, and then I pointed out to him, as diplomatically as I could, that whether the war continued or stopped did not matter a bit; but if the Chief Wharfinger's reputation were lowered,

that was a question of international importance. What about his authority, etc., etc.? In ten minutes I had him feeding out of my hand. He banged his old bowler two inches further over his eyes, rose and said that he would settle it, and he did. He went out to the side gate where the strikers were lounging about and spitting. He called together the gang-leaders, greeted them with a flow of language which would have blown flat a London suburb, and then proclaimed that unless their men returned to work forthwith, he would not engage one of them for six weeks. They knew that he meant every word he spoke, and a minute later they had forgotten their grievance and were all trooping quite cheerfully towards their ships. There was not a patriotic word in his address, nor the hint of an appeal to their better natures. It was just a deluge of words which went straight home. He did not like soldiers, yet he was a born general.

In every way the most trying event, and certainly the most interesting, was the disembarkation of the Canadian Expeditionary Force, which sailed from Canada early in October under orders to disembark at Southampton about the middle of that month. Had this decision been adhered to, there would have been nothing of interest to note; for the Embarkation Staff was now so efficient that at Southampton the most unforeseen contingencies could have been met. But this was not to be, and two days before the convoy was due to arrive, on account of the German submarine menace, it and its escort were ordered to put into Plymouth Sound.

At the time I had no idea that disembarking at a naval port is a more exasperating problem than that of landing on an open beach, and nearly as difficult as landing on a quicksand. It was as well that I did not know this, and that I was as yet unacquainted with the Royal Navy and its century-old rituals. Had I been, I might well have been winded at the start; but being oblivious to the ways of the Senior Service, when General Hamilton informed

me that Devonport and not Southampton would be the port of disembarkation, I took the change as a matter of course.

Less than a year before I was commanding a Company at Aldershot, and there my responsibilities were virtually *nil*; now all of a sudden, on the strength of a telegram, I found myself in military control of the Great Western and London & South Western Railways. I could cancel any train I liked and order whatever train I wanted, so long as I got the Canadians to their destination. Further, to complicate my work, a second telegram was received in which we were informed that the families of married officers and men who had left India for the front would also be disembarked at Plymouth.

I kept no diary at this time, and I am therefore uncertain of my dates; yet it must have been about October 15 when this information was received, and one of the first things I did was to telephone for an administrative officer to come to Southampton from Salisbury Plain to discuss detrainment arrangements with me. Then I drew a cheque on my autocracy over the two railway companies, ordering a special train to convey the Embarkation Staff to Devonport.

Later on the officer for whom I had telephoned turned up, sent no doubt by General E. A. H. Alderson, who was to command the Canadians on their arrival. He was a Colonel Johnson, or Johnston, a dear old thing. He entered my office and gazed upon me as if I were the last-joined novice of a convent. I thereupon explained to him that the Canadians were not a disciplined force, and though the men would certainly be able to look after themselves, there might easily be difficulties over their baggage and stores. I suggested that it would be wise to hire a field near the detraining station; mark it out in allotments according to units; dump all baggage on them, and later on sort it out. He was not a bit annoyed at my presumption in suggesting a course of action; he simply looked at

me with an expression of sorrow and replied: "Sonny, I was doing this kind of work before you were born." I said no more, but from what I heard later on, the detrainment of the Canadian Expeditionary Force would have staggered the imagination of Dante—it was an Inferno squared.

On arrival at Devonport, I received instructions to leave cards on three Admirals and sign their respective books—apparently no one had woken up to the fact that there was a war on. I had no cards and no time to waste in searching out their residences, so I dumped my kit and went over to the room which had been allotted to me as an office. I then looked up the Captain-Superintendent, and obtained from him the names of the ships to be berthed the next day, the number of the berths and the time disembarkation would begin. I had to have this information so that I might work out the railway arrangements.

He was a charming man, but unfortunately knew next to nothing. Eventually he named four ships and later on ascertained what units were on board them. This in itself was no easy task, because the embarkation at Quebec would seem to have been so completely muddled that no one could vouch for anything. For instance, S.S. *Manhattan* closely resembled Noah's Ark. All officers and men who had missed the ships they should have sailed in had boarded her, and all baggage, etc., which had arrived late was lowered into her holds. Stranger still, units actually disappeared and were created whilst afloat. For instance, one Infantry Battalion, having nothing better to do, had looted the hold, and having discovered some cases of spurs, arrived at Southampton as an untraceable Cavalry Regiment.

From the tonnage of the ships I very roughly worked out what they were likely to accommodate, and as the Admiral-Superintendent definitely refused to sanction entrainment within the dockyard, I at length persuaded him to allow me to order a train to remove the baggage from the wharf

to Plymouth and Friary Stations, where the men would entrain. This, of course, also necessitated the men marching through the town. Further, it was decided that entrainment should start at eight in the evening, which meant marching out of the dockyard some two hours earlier. Then I got out my orders and set to work on a long general instructions, of which by some chance I still possess the original draft. Looking at them now, they fill me with amazement. Certainly to-day I could not accomplish such a feat, for one has to be young to be so elastically-minded.

The next day the coal wharf was substituted for the one which had been originally allotted for disembarkation; this literally rendered the whole operation infernal, especially when half a gale was blowing, for then everyone was choked and blinded with dust. This was immediately followed by a second calamity; the baggage train I had ordered was hours late. At the time I did not realise that, though it had but a few miles to come, it would have to pass through the entrenched positions of three Admirals, the third of whom had, quite unknown to me at the time, commandeered it for naval work. As the baggage had to be removed, and as after this incident I realised that it was useless expecting Admirals to display any sympathy whatever towards the Army, I asked General Hamilton to exercise his autocratic powers and give me permission to requisition every vehicle I could lay hands on in Devonport and Plymouth. This I did, and the most extraordinary collection was impounded. The next difficulty was that the Canadians, so they informed us, had come over to fight and not to do coolie work; consequently they flatly refused to handle their baggage. It was no good arguing with them, so in place we roped in over a thousand men of Kitchener's Army, who toned with the transport very well. I remember one man dressed in a khaki jacket, green plush breeches and a bowler hat.

Nothing was impossible, except the Admirals, and now

that we had K.'s men behind us, had there been any more trouble I think we would have taken over the dockyard.

The trouble came quickly enough, and this time it was we ourselves who were responsible for it. In my orders I had laid down that entraining would begin at 8 p.m., which meant that trains would be running up to about midnight and that marching out of the dockyard would be from six onwards, because Friary Station was several miles away.

What happened was this: The men were for the most part absolutely raw; they were met by rejoicing crowds and assaulted by every young and old harlot in the dual city. Men fell out or were pulled out of the ranks to vanish down side streets. A few reached the railway stations, and the remainder painted Devonport and Plymouth pink, red and purple.

I saw General Hamilton the next morning, and he agreed with me to close every public-house at 9 p.m., and to put forward entrainment to midnight. But what to do with the drunks, for the town was swarming with them? Yet even with the trains put forward and the public-houses closed, there was no assurance that drunkenness would not continue; in fact, it most certainly would. Fortunately, during one of my tours round the dockyard, I had noticed what appeared to be a disused racket-court, marked "Torpedo Store." I ascertained who was in charge of it, and he, not being an Admiral, was a quite sensible man and let me use it. This shed we turned into a prison in which all drunken men found about the town were locked up for twenty-four hours in order to give them time to recover their wits. After the second day's disembarkation I had a train labelled "Drunkards' Special" ready at five each morning to convey them to Salisbury Plain.

One of the most annoying idiosyncrasies of the Captain-Superintendent was to change the order of the ships. He would give out that A, B, C, D would be brought alongside the coal wharf, and then, without informing me, D, E, F

and G turned up instead. Whenever I remonstrated with him—and I did so very politely, for he was a big noise and I in his ears no noise at all—he would answer somewhat mysteriously: “Well, you do not understand; it is all a matter of the tides.” Thoroughly annoyed by this fatuous excuse, one day I replied: “Sir, if you will arrange for not more than four tides to-morrow, I will get on with my job—otherwise I will not order another train.” He, I presume, had never before been spoken to like that, and being at heart a sensible man, he henceforth left the tides to the moon.

Towards the end of the Canadian disembarkation the “married families” arrived from India, and fortunately for them they were landed at Plymouth. It was a most distressing event, for many of the wives had lost their husbands and had only been informed of this on their arrival. I remember one young widow, little more than a girl, who was completely distraught. She had no money and was quite incapable of doing anything. I eventually extracted from her the address of a relative, and as she had not obtained a warrant from the Paymaster, I bought her an ordinary ticket and wired to her destination for someone to meet her.

Eventually the disembarkation came to an end. On the last morning I was standing on the naval parade ground watching a number of lorries being assembled, their chassis having come on one ship, their engines on another and so on, when I noticed a large packing-case not far off. I asked some Canadians to put it on to one of the lorries, which they promptly refused to do. Then I went away and presently came back again. The case was still there, but someone had opened it. In it was a grey steel coffin with a little window in it, but there was no corpse inside. On the plate below the window was the name of a German, and under the name the date—1907. I could only guess its history: probably it had been sent out from Germany to fetch back a corpse, had got

mislaid, and after seven years' wanderings had turned up with the Canadians' baggage.

On October 23 the Embarkation Commandant received the following telegram from the Quartermaster-General: "Lord Kitchener wishes me to convey his appreciation of the successful way you and all under you have worked in carrying out the disembarkation of the Canadians." "Successful" was not the right word, the Admiralty had prohibited it; yet I do not think there is one which exactly fits the occasion.

On our return to Southampton we resumed our normal duties, and I can remember but one small incident which in its way was rather an extraordinary one. During the last week in October a parcel was received at the Embarkation Office with the following inscription on it: "To the Embarkation Officer, Southampton. Please give this to any soldier whose name is 'Cecil' and who is going to the front. From a little boy named 'Cecil' and a little girl named 'Dorothy.'"

Somehow or another it found its way into my office and lay there for about five weeks, pressure of work having caused it to be overlooked. On November 29 I noticed it, and as one of the Embarkation Staff was going down to the wharf to see a ship off, I said: "Take this parcel with you and find out whether there is a 'Cecil' in the draft which embarks to-night." He did so, and there happened to be a man named "Cecil Potter" in a draft of the 5th K.R.R.C.; so the parcel was handed to him.

Two or three days later we were somewhat astonished to receive a postcard from a Mrs. Potter, addressed from 20 Priory Street, York. It read: "Dear Sir: About five weeks ago I forwarded you a box of comforts to be given to any soldier for the front called 'Cecil' from my own Boy and Girl, 'Cecil' and 'Dorothy.' To-day we have received a nice letter of thanks from the recipient, 'Cecil Potter,' 5th K.R.R.C., 11822, who, remarkably enough, has a sister named 'Dorothy' living in Bristol. We beg

to thank you heartily for your kindness and courtesy in taking the trouble to find an owner for our parcel, among your other thronging duties.”

The kindness and courtesy were certainly not ours, for to lay claims to them would, I think, be nothing less than an act of divine burglary. On receipt of the parcel we had not the faintest idea who the sender was, but Mrs. Potter must have placed a letter inside it.

Ever since September, one by one, the Staff College students, who had been working as Assistant Embarkation Staff Officers, were drafted to other appointments: some in England, some overseas, and several had already been killed. I was the last left in Southampton, and ever since the disembarkation of the Canadians I had been agitating to return to my Regiment or be given a Staff appointment in France.

For a long time no notice was taken of my appeals; then one day, early in December, I was tumbled out of the frying-pan into the fire, for I received orders to report myself on December 15, for duty as a G.S.O.3 to the Headquarters of the Second Army, Central Force, at Tunbridge Wells. I could imagine nothing more dreadful, and as the future proved, my imagination did not play me false.

Sonia and I packed up. The 15th was her birthday, and though this appointment was no present to me, in the inscrutable lap of Fate it may have been a present of my life to her. I handed over my duties to Stone, who was more than competent to carry them out; in fact, he was capable of improving on any appointment I have ever held. Then, having said good-bye to those with whom I had worked and who had worked with me, we set out on our new adventure.

On arriving, I reported myself and found that this Army, or rather collection of men, was commanded by General Sir Frederick Stopford and that my immediate chief was Brigadier-General H. J. du Cane, nicknamed “Sandy.”

It consisted of two Territorial Divisions. There were no rifles, no guns, no machine guns, practically no transport and, worse still, no plan, no method, no system, no object and no idea. Here was work enough to be done, yet all that was attempted was drill without arms and digging trenches all over the countryside.

Before describing my duties, I will first describe my master—General du Cane. He was a tall distinguished-looking man, well advanced in middle life. Outside the office he was the most charming of human beings; inside he was somewhat peculiar. In fact, he was a military Jekyll and Hyde. His day's work was reduced to an exact ritual—on entering the office he would go straight to the telephone, and, having rung up the Exchange, would bawl out at the top of his voice: "I am Brigadier-General du Cane, Brigadier-General, General Staff, Second Army, Central Force, Tunbridge Wells." Unfortunately for him, the girl at the other end also had her ritual, and she would invariably reply to this rigmarole: "I beg your pardon." Whereupon he would roar out again: "I am Brigadier-General du Cane, etc., etc.," which was generally answered by the girl asking him if he wanted another call. Then he would stamp on the floor till the whole room shook, bang the instrument, and yell down the mouthpiece: "No, you ass. I am Brigadier-General, etc., etc." After this she would put him through, not always to the number he had asked for, but generally to that of some poor old paralytic woman in the neighbourhood. This done, he would bellow into her ear with enough force to lift her out of bed: "What's wrong with your damned telephone . . . those women at the Exchange . . ." when, promptly he was cut off. Then it would begin all over again.

His language, which normally was exquisite, for he was a highly cultured man, was on these occasions so expressive that one day, out of consideration for the good name of the Army, I went down to the exchange to apologise. When

I explained my mission, all the girls began to laugh and said that they enjoyed every moment of it; he was such a change from the ordinary caller-up. So the daily telephone contest continued.

Having eventually got his call through, he would then start on his morning's work. I might mention here that his G.S.O.2, a Major who wore an eyeglass, did nothing at all; he called the General a variety of descriptive names and would stand for hours each day gazing out of the window on to the parade and comment in an undertone on the women who passed by. Meanwhile the General would sit down at his table and put on a pair of glasses the right eye of which was blacked out by a metal disc with a diagonal slit in it. He generally kept his cap on, pulling it down over the blacked-out eye, and when he talked to the G.S.O.2 or to me, he would cock his head down and look over the non-blackened-out eyeglass.

He next rang the bell, whereupon the chief clerk brought in the morning's correspondence. As the first letter probably began: "Reference your number so and so . . .," he would call for that letter, and finding another reference number, would call for that one also, until he arrived at the beginning of all things; then he would probably go to the telephone.

This annoying idiosyncrasy would not have mattered much had there been any system of filing or registration; but there was none. All papers were just thrown into an immense safe, and each morning, when work began, they had all to be hauled out until the entire office floor was covered with files. Cocking his left eye, he would bawl out: "Reference your number B.G.X. 1706, what's that? where's that?" Whereupon I would go down on my knees to search for it, whilst the G.S.O.2 would gaze through the window and mutter: "Fluff—what ho! . . . paralytic! . . . my God! . . ." etc., etc.

Not being accustomed to grovelling, I set to work indexing the files, and, when this was done, one day the

General said to me: "The War Office is very nervous about an invasion, there are five million [or whatever the number was] sheep in Sussex, Kent and Surrey. When the enemy land, they will at once be moved by route march to Salisbury Plain." I knew that this was an impossible task, and that Sir John Moore had proclaimed it as such in 1805. But there was no arguing over it, so I spent days and days working out march tables for sheep. One day I said to him: "Do you realise, sir, that should all these sheep be set in movement, every road will be blocked?" "Of course," he answered; "at once arrange to have a number of signposts ready and marked, 'Sheep are not to use this road.'" "But," I replied, "what if the less well-educated sheep are unable to read them?" This brought our conversation to an end, but, unfortunately, not my tribulations; for as none of us was even an amateur farmer, no one of us had thought of the lambing season, and when it came along all our time and space factors had to be readjusted. If ever there was a wicked waste of time, it was this.

Another hare-brained idea was to destroy all intoxicants in the public-houses the moment the enemy landed. Du Cane was against this proposal, yet to consider it he summoned a meeting of the Local Emergency Committee, upon which sat a variety of ancient celebrities, among whom was a General Heath, aged about seventy-five and an ardent teetotaller. To this assembly of notables the General pointed out that, as the enemy were likely to land in Thanet, it would be better to double the liquor than remove what there was there, because the drunker they got, the more time we should have in which to collect our scattered forces. Whereupon Heath, white and trembling, rose to exclaim: "But what of my wife, General, what of my poor wife?" Considering that this good lady must have been over seventy, du Cane quite rightly replied that she ought to be safe enough.

Drink and sheep settled, I was left with literally nothing

to do. I was supposed to be in charge of training, but I was not allowed to leave the office, and even well into 1915 the Army possessed only two machine guns and three to four hundred so-called Japanese rifles, which I believe came from the U.S.A. Not being of an idle disposition, and finding it impossible to sit from 10 a.m. to 1 p.m. and 2 p.m. to 6 p.m. in the office doing nothing, I wrote an entire book running to 626 typed quarto pages, which I called *Notes on the Training of the New Armies, 1797-1805*. Whilst writing it, I discovered that all the mistakes which had been made during the Napoleonic invasion threat were being repeated in detail. After the war, in 1924, I split this book into two volumes, the one entitled *British Light Infantry in the Eighteenth Century*, and the other *Sir John Moore's System of Training*. That such work was possible during the greatest war in all history is sufficient proof of what Headquarters Second Army, Central Force, were like.

There was no leadership, no centre of energy, no motor which would drive the Army along. When General Sir Frederick Stopford departed for Suvla Bay and Lieutenant-General C. L. Woolcombe took his place, things remained unchanged. Everyone was equipping, that is, doing Quartermaster's work, and no one was thinking, planning and then acting. "First comes the deed," says Faust, but the deed was dud in Tunbridge Wells.

Though I was supposed to be in charge of training, there was none. On three occasions only did I leave the office for the countryside, because du Cane was pre-eminently a paper soldier. Once I went to somewhere near Sheerness to look for an aviation landing-ground; once I went to Arundel in search of spies; and once I went to Lewes to watch a remarkable event—a tactical exercise.

Tunbridge Wells, like so many other patriotic residential towns, was spy mad. If a serving-girl showed a light in an attic window, in came the report of signalling. To Arundel I was sent on a wild-goose chase, only to discover that the

alleged spies were a couple of lovers living in a boat on the Arun. The tactical exercise was equally unrealistic. A long column of Territorials was slowly walking into the arms of the enemy, when I rode up to the leading Battalion Commander and said: "I think you ought to strengthen your advanced guard." Obviously, I meant that it would be wise to reinforce the vanguard by part of the main guard. But it was not obvious to him. What did he do? He at once halted the column and threw out a second advanced guard, "according to book," to follow on the heels of the first one.

Why were such things possible? The fault lay with the War Office. When the second-line Territorial Battalions were raised, any dud Colonel or Major, unfit to command a first-line unit, was given command of a second-line one. In fact, the more difficult command grew, the more incompetent grew the Commanders. The same thing happened with the Regular units overseas: an incompetent Commander was not sacked, he was sent home to take over an equivalent appointment or was promoted to a superior one. The result was that the home units and reinforcements were for the most part commanded by tactical and administrative misfires, whilst the more competent officers were killed off at the front. It was a suicidal system which cost us scores of thousands of lives.

In March 1915 I agitated to be sent overseas, anywhere, for I was not particular, but du Cane would not hear of it. Then, in April, I did so again—and with the same result. At last, in May, a trivial incident precipitated my departure. I was sitting at my table opening letters; one was of the normal spy type: a dirty piece of paper, undated, unaddressed and unsigned, reporting that Mr. Somebody's cowherd had seen a bicyclist on a hill consult a map in a "suspicious way." I crumpled it up and threw it into the waste-paper basket; but fortunately at the moment du Cane had his head cocked in my direction, and noticing what I had done, he exclaimed: "What is that you have

thrown into the basket?" I told him, whereupon he replied: "Good heavens! it may be a most important clue. Let me see it at once." I took the paper, smoothed it out and handed it to him. A slight altercation followed which led to him saying sarcastically: "You seem so full of ideas, perhaps you will tell me how to run this office?"

Here was my opportunity, and I did not miss it. I told him in the frankest way what I thought of him, his office, his work and of the Army. He was so staggered that he replied: "If that is what you think, I will have you sent to France" (so that I might be shot!). The result was that, on June 1, a telegram came informing me to hold myself in readiness to join the VIIth Corps in France when raised. Then nothing happened until July 18, when a letter arrived through the Commander-in-Chief Central Force office ordering me to proceed to Folkestone as early as possible, and, on arrival at Boulogne, to report myself to the Base Commandant.

Thus did my penal servitude end. From December 15, 1914, to July 19, 1915, over seven months in all, I might as well have been in the moon. It was the only appointment I have ever held in which I could do absolutely nothing. Yet, in spite of this, I have never ceased to look back upon General du Cane, now long dead, as one of the most charming and delightful men I have ever met outside an office; inside one he was impossible.

. On the morning of July 19, Peter Hawker, one of the gentlemen chauffeurs attached to Army H.Q., drove me and Sonia to Folkestone. There she waved me good luck and good-bye as the ship carried me out of the war of paper towards the war of shells.

CHAPTER III

CATTLE-WIRE AND SPADE

ON the afternoon of July 19 I landed at Boulogne. There I received instructions from the Base Commandant to proceed direct to St. Omer and report myself at G.H.Q. as he did not know the whereabouts of the VIIth Corps. I arrived at that sleepy little town in the evening, and, as it was too late to find anyone, I put up at some small tavern, the name of which I have forgotten.

The next morning I reported myself, and was told that VIIth Corps Headquarters were at Marieux, a village lying a few miles south-east of Doullens, and that as an officer was proceeding by car to Beauquesne, he, on his way, could drop me at Marieux. This I was pleased to hear, for by train my journey from Boulogne to St. Omer had taken five hours, and to Doullens it would in all probability have occupied twice that time.

At Marieux I arrived a little before lunch. There I met Captain C. A. S. Page, who had been a student in my division at Camberley, and then General F. Lyon, the B.G.G.S. of the Corps, who introduced me to Sir Thomas D'O. Snow, the Corps Commander. As there were two G.S.O.3's on the Headquarter Staff, namely Page and myself, Lyon decided that he should take over the intelligence work, whilst I was to be understudy to Major A. T. Paley, the G.S.O.2, and assist him in operations. I soon discovered, however, that my work was nil, because for months past cattle-wire and the humble spade had brought all operations to an end.

Marieux was no more than a hamlet, consisting of a few farm-houses and a château, as well as an old Roman entrenchment in a small wood close by. The château, in

which the Headquarters were established, was of the normal one-room-deep type, and being surrounded by a high wall, in appearance it resembled a fortified house. It was some ten miles from the front, and the only signs of war were an occasional hostile aeroplane, the distant booming of a gun, and at night-time the reflection of the gun and Very light flashes on the skies.

At this time the VIIth Corps was part of the Third Army, commanded by General Sir Edmund H. M. Allenby, whose Headquarters were at Beauquesne, two to three miles south-west of Marieux. South of the VIIth lay the Xth Corps, and north of it the line was still occupied by the French; mostly old Territorials who had lived so long in their trenches that they had all but grown into troglodytes.

My first visit to the front took place the following day, when General Lyon and I motored out to Colincamps, close by which village I saw a few German shells fall; otherwise all was as still as a graveyard. On my return I was given a paper to read. It was headed: "What Errors do the French Appear to have Committed?" but on our own errors, our past skilfulness and future actions I could find nothing in print, so I asked Paley how, so far as I was concerned, was I to interpret the word "operations"? After due consideration, the idea struck him that in my case it should be "visiting the trenches"; consequently this became my daily task. And as the weeks passed by I grew to know every trench in that maze of works which ran from the right of the Corps' front, at the small village of Hamel, itself in the front line and still inhabited by a few old peasants, to the large village of Hébuterne on the left. In this area there were over 500 separate fire and communication trenches; yet the Corps' frontage was then not more than six miles in extent. These had been dug by the French on no recognisable plan; were in many cases in collapse and in a most insanitary condition; for during the fighting in April and

May, a considerable number of dead had been buried in them, and when it rained the corpses developed the unpleasant habit of creeping out. But to make up for this, the trench names were magnificently Gallic, such as—"Vercingetorix," "Latour d'Auvergne," "D'Aurelles de Paladine," "Gouvion St. Cyr," "Poniatowsky" and "Rouget de l'Isle," which fairly stumped our soldiers. One of the filthiest was most inappropriately named "Pasteur," and as French dead had been buried in the bottom of it, on a wet day one literally squelched through human remains. Many of these trenches had to be abandoned or re-dug. In the winter most of them fell in, and trench maintenance became the one and all-absorbing problem.

Altogether, life on the Staff was pleasant enough; it was, in fact, too comfortable to be an example to the entrenched front. Yet those on the Staff cannot be blamed for this, because to have organised discomfort, as one or two Generals attempted to do, in no way popularises the Staff and ends in rendering it discontented. The only true solution is an active war, and this in the circumstances was not possible.

Our mess was a very happy one. The Generals and A.D.C.s fed in the château, and the junior Staff, to which I belonged, in a small house immediately opposite its main entrance. Our Mess President was Major C. Ward Jackson, the Camp Commandant, who would whittle away his spare time in parodying the ways of the Staff, and on occasion issue sarcastic orders, such as: "In case of a sudden move: (1) All Generals will at once take to their motor-cars and proceed to the hills. . . . (3) Staff Officers will take the opportunity of looking after their own business for once and will on no account address a word, even of commendation, to the Camp Commandant. . . . (7) G.S.O.3 (Captain Page) will take charge of the 1d. Encyclopædia. . . . (8) G.S.O.3 (Captain Fuller) will remain behind and not become sardonic until the

Kaiser comes to discuss with him the ownership of the Earth."

Another dealt with "Suggestions as to Property and Effects to be left behind in case of a Move Forward." The less cryptic paragraphs of this order read: "Lieutenant-General Sir T. D'O. Snow, K.C.B.—anything which might cause him to melt . . . Brigadier-General F. Lyon, D.S.O.—anything which might cause him to freeze [he used to wear fur-lined boots] . . . Brigadier-General A. F. Sillem—assumptions of fierceness and severity. These do not belong to him . . . G.S.O.3 (Major Fuller)—all unnecessary hair-raisers: also all razors, knives and retorts . . . A.P.M.—a number of his police and his brevet, but not his *cuisinière*."

In my spare time, and more often than not in the evenings, I used to think over the war on a higher level than my humble duties warranted, and during September I wrote a longish paper on "The Principles of War with Reference to the Campaigns of 1914-1915," which in an abbreviated form was published anonymously in the February, 1916, number of the *Journal of the Royal United Service Institution*. A few quotations from it may be of interest, as they show in what direction my mind was then working: "These months [the winter of 1914-15] were some of the wettest on record: the British line was waist-deep in mud . . . yet it was the mud of Flanders which saved this thin line from annihilation in spite of its swearing. Had Flanders been a dry, open plain in place of a swamp, it is not too much to suppose that the war would have been over by the summer of 1915." I objected to the attempted siege of the Central European Empires, and accentuated the importance of surprise, on which I wrote:

"We surprised Germany at Neuve Chapelle by our concentrated artillery fire; possibly on some other occasion we shall surprise her without it, when she is most expecting it. There are ways and means to the cunning, and the simplest . . . are generally the best.

“ In war, surprise is essential to all the principles, and it is the least governed by passing events, for its inherent virtue is its knack of turning all conditions, however adverse, to its own advantage. If skilfully applied, it therefore becomes the canceller of conditions, producing the maximum amount of fear and disorganisation with the minimum of effort.

“ A nation or an army, once it is surprised, loses its balance, its sense of unity and co-operation; each individual becoming seized with an intangible fear, its military power crumbles and disintegrates, and unless some master steps in and forces a halt, at length this nation or army becomes a mob.”

The certainty grew upon me, from what had happened and from what was from time to time proposed, that the strategy of the Western Front was not understood, and that it was mainly governed by topography. I was certain that, were the Allied Powers destined to win the war, victory must be sought in the triangle of ground Arras-Namur-Rheims, and not in Flanders or in the Verdun or Vosges areas (Diagram 3). On this I wrote as follows:

“ The German western armies form a huge zigzag running from near Ostend to Noyon, from Noyon to Verdun, and from Verdun to near Basle, the upper half of which constitutes an extensive salient with its apex pointing towards Paris, and the lower a re-entrant with its apex towards Metz. The northern extremity of the salient rests on the sea and the Flanders marshes, the southern on the Ardennes, flanked on one side by Verdun and on the other by Metz. The Ardennes are an obstacle, and though several railways cross them, the natural lines of communication, as far as Germany is at present concerned, run between their northern edge and the Dutch frontier, a small gap, with Liège as its centre. From this point the railways and roads splay fan-shaped westwards. The result of this is, that the Germans have every facility that communication and security can give them. Further,

they can reinforce any position of this salient against a single attack more rapidly than can the French and British reinforce a single attacking army. Should, however, a dual attack be made, one from the direction of Arras eastwards towards Namur, and one from near Rheims north-eastwards towards the same place, the communications in the angle formed by the lines of advance of these attacks will be severed one after another, with the result that the German armies between Arras and Rheims must either fight or fall back. If the latter course is adopted, the continual shifting from one line of supply to another will create such overwhelming confusion that the falling back alone will probably mean to Germany a loss of between three and four hundred thousand men."

This is what happened in 1918.

Later on, in 1916, parts of this study appeared in an official G.H.Q. Memorandum signed by the C.G.S., but without a hint of their origin, and the whole was published as a pamphlet by the Commandant of the Senior Officers' Course, Aldershot, with the indirect origins of which school I was closely connected.

A few days before leaving for France I had sent a copy of my small book, *Training Soldiers for War*, to General F. Gordon, who, in 1912, was serving on the Staff of the 5th Infantry Brigade. In his acknowledgment he said: "Your book deals with a subject of vital importance, which has been absolutely neglected in our country." Being interested in it, he, so I understand, showed it to General A. L. Lynden-Bell, the M.G.G.S. of the Third Army. This led to a suggestion being made that, as officers in France were rapidly deteriorating, a school should be established for their instruction. Whatever actually happened, on October 5 I received a letter from Captain Green, one of General Lynden Bell's G.S.O.'s, in which he informed me that his General was anxious for me to work out a scheme for a school consisting of 50 officers and 50 N.C.O.s, the course being for one month

“The instruction to be as practical as possible, with a view to teaching them what discipline means and how to look after men. He wants them to be imbued with patriotism and *esprit de corps*, so that discipline is not enforced merely by punishments. Such things as how to look after men in trenches and billets appear to be very important. I understand you wrote a very good book, and he wants the school to be on the same lines. . . .”

It is indeed strange that this small book of 123 pages, written when I was a Territorial Adjutant, was destined to be the seed from which sprang not only the Third Army School, but, later on, a school in each of our Armies in France and dozens of Corps and Divisional Schools as well: further, as I will describe shortly, that this School was the parent of the existing Senior Officers' School at Sheerness and its brother at Belgaum.

The day after receiving this letter I walked over to Beauquesne and looked up General Lynden-Bell, who asked me to take command of the school when it was formed. I told him that I did not think that this was right, for, having been in France less than three months, I considered that I should not possess the necessary prestige to instruct officers who had been fighting for over a year. Thereupon he asked me whether I knew of a likely Commandant, and I replied: “Yes—Colonel R. J. Kentish.” I then left him, and on the following days motored round the neighbourhood looking for a Headquarters. Eventually I pitched upon a fine new white stone château in the little town of Flixecourt, which lies to the north-west of Amiens. There the Third Army School was established under Kentish, and to him I handed over its first syllabus; but General Lynden-Bell was not present at its opening, for by then he had been transferred to Egypt.

On September 25 had begun the battle of Loos and the French attack on Vimy; but the VIIth Corps had no part in these operations, except that of assisting the French with some heavy gun-fire on their right. Some time after

these battles I went home on a week's leave; then, towards the end of January 1916, I was sent up to Bavincourt to arrange with the French Command there our taking over of the trenches south of Arras. I was shown the most wonderful maps and plans, but when I went forward and reconnoitred their defences, I discovered that all these schemes were on paper only, and that the trenches were in a parlous condition. On December 19 Sir John French handed over the supreme command to Sir Douglas Haig. On February 4, 1916, I left the VIIth Corps and took over the appointment of G.S.O.2 37th Division.

I was sorry to leave VIIth Corps Headquarters, with which I had spent a very happy six months. But my departure did not remove me from their jurisdiction, for the 37th Division was now in the Corps' area, its Headquarters being located but a few miles north of Marieux. There they were established in a small château, the normal gimcrack and miniature Versailles imitation, which internally was decorated with family portraits dating from the days of the first Crusade onwards. Unfortunately they were all painted by the same artist and bore close resemblance to a collection of public-house signs.

When I arrived, the owner—a Count, who, I was told, had obtained his title from the Pope for a moderate sum of money—was no longer in residence. He had been there when the 37th Division arrived, and greatly resented his château being converted into a Divisional Headquarters, not because he disliked *les Anglais*, but because his domains would henceforth be divided between two counts, for the 37th was commanded by Major-General Count Gleichen. I was told that shortly after the General had established his Headquarters there, the Count and Countess asked him and some of his Staff to dinner in order to show how much they resented this invasion. At first the conversation was restrained, then there was some chatter and suddenly a lull, in which the Countess, a

Jewess, was heard to say to her neighbour: "*Il est un Boche!*" This was meant for her guest of honour; to which that guest, turning to his neighbour, retorted in a loud undertone, as if answering a question: "*Certainement, elle est une juive!*" Thus counter-attacked, the Count gathered up his Countess and his retainers and abandoned the unequal contest.

The Countess was his second wife, and though it has nothing to do with this story, his first wife met her end in so tragic a way that her death is worthy of permanent record. It happened thus: Close by the château was a small wood in which the Count's pigs rooted about, and he, proud of his ancestral Crusaders, was wont to give displays of his prowess by calling together a few local celebrities to assist him in blowing holes into them as they peacefully munched acorns under his oaks. On one of these occasions, a guest, seeing something move through the brushwood and hearing a violent grunt, put up his gun and let fly. Parting the branches, he recoiled in horror, and rushing to where the Count was standing, he bawled out: "Oh! Monsieur le Comte. Oh! Monsieur le Comte, the most terrible thing has happened! I thought I heard a pig in the bushes, and I have shot the Countess dead!" Whereupon the Count, patting him on the back, replied: "Calm yourself, my friend, calm yourself; more than once have I nearly made the same mistake."

This château was not, however, to be a permanent halting-place, for, once the French withdrew from the area north of the VIIth Corps, our Headquarters moved to Bavincourt, where we took over a comfortable modern residence, which had been built by a coffee-stall millionaire. There we lived in complete peace, and the sole time danger approached us was when one night a dud anti-aircraft shell crashed through the stable roof and, passing through a horse, buried itself in the ground.

My duties were much as they had been, a little more office work perhaps, but still almost daily visits to the

trenches, which stretched from Fonquevillers on the right to just south of Bellacourt on the left. These were held by the 110th, 111th and 112th Infantry Brigades, with Headquarters at Pommier, Bailleulval and Bienvillers-au-Bois. I remember making out a somewhat elaborate defence scheme for this front, which in any case would never have been adhered to, for the Brigadiers were very independent and there was little control over them; they did much as they pleased, and were for ever building new Headquarter dugouts.

In April I was suddenly ordered to proceed to Auxi-le-Château, where the Third Army School had recently moved. Kentish, who had been in charge of the school when at Flixecourt, had gone to England, and his place had been filled by a Major G. J. Brownlow, a Rifleman. Just before leaving, Kentish had suggested a course of instruction known as the Commanding Officers' Conference. His idea was to withdraw some twenty to thirty Lieutenant-Colonels and Senior Majors at a time from the trenches and put them through a seven-days' course of instruction, during which Conferences would be held in order that they might ventilate their views. As the first of these so-called Conferences had been arranged for, and as their initiator was no longer in France, at his suggestion, I expect, his mantle fell upon my shoulders.

At Auxi I got into touch with Brownlow, who could tell me no more than that some two dozen officers, all senior to myself, were expected in a couple of days' time. I was single-handed, I had no Staff, no assistant instructors and no syllabus of instruction ready; in fact, nothing but my wits to rely upon, and some forty-eight hours wherein to meet what I realised would be a deluge of irate soldiery, because returning to school is the one thing the British officer cannot stomach.

I at once began at the physical end of my problem, for the mental did not worry me much. I took over a house as a mess, engaged two French women as cooks, collected

some soldiers as waiters and appointed a Corporal as caterer. I then obtained, from where I do not remember, knives, forks, spoons, crockery and tablecloths, after which I scoured the small town for the most comfortable billets that I could find. I knew that good food and good beds were the secrets of success, and so they proved to be; for when the deluge descended, it was even more truculent than I had imagined. The Colonels were furious at having to return to school. One, by name Oldman, came up to me and snorted sarcastically: "Do I parade tomorrow morning with a rifle?" To which I replied: "That depends upon whether you are a third-class shot or not," which was overheard by several standing by, who thereupon sat down to tea in place of asking me impertinent questions.

Our first dinner was a great success. The old warriors thawed visibly, and by the time the canteen port went round they had become quite schoolboyish. Then I left them and, retiring to my room, worked out a course of instruction. As far as I can remember it consisted of two lectures a day, generally given by myself. The notes on three only have survived the ravages of time, and they are headed: "Address on the Principles of War," "Address on Holding a Defensive Line" and "Notes on Battle Drill." The rest of the morning was given over to the Conference, and a couple of hours during the afternoon were spent in watching bomb-throwing, siting machine-gun emplacements and trench lines, etc., etc.

The Conferences were a huge success. Every evil, real and imaginary, concerning red tape, red tabs and reddest of red Higher Commands was ventilated in the most insubordinate way. Hot air was blown off in gusts and gales, and this blowing-off alone, I am sure, did a lot of good. I reported our suggestions fairly fully to Third Army Headquarters, because I considered that it was not a bad thing for the Higher Command to realise what the front line thought of them; and on one occasion, by some

mistake, a batch of reports was circulated to Corps and Divisions, with the result that no one could understand how it was that the Army had suddenly become so repentant. This mistake, however, was not mine; it was either an act of God or of a G.S.O.3.

After five of these courses—and the credit is due to my two women cooks—they became so popular that the Third Army decided to place them on a permanent and properly organised footing. The upshot of this was that the Senior Officers' Course, and not Conference, as it was now called, was transferred to Aldershot and placed under the direction of General Kentish. It lasted out the war and is thriving to-day under the name of the Senior Officers' School.

After this happy conclusion to a very strenuous five weeks, I returned to my duties in the 37th Division, and having a good deal of time on hand I finished off a long study on "The Principles of Defence as applied to Trench Warfare," which I had for some time been engaged upon. Later on I sent it to the Editor of the *Journal of the Royal United Service Institution*, but when he submitted it to the War Office for permission to publish, it was refused, as it was considered that it might be of value to the enemy; consequently, I presume, the logic was that it could be of no earthly value to ourselves.

As this study was based on nine months' experience, and, unfortunately, were we to-morrow to be drawn into a Continental war, we should within a fortnight of its declaration be digging for dear life, I will quote a few extracts from it, and only a few, for the paper itself runs to some seventy-five typed pages.

I again pointed out the vital importance of the salient Arras-Noyon-Rheims, calling it "The German heel of Achilles." I further stated that "To-day Germany will stand much squeezing without breaking," and that, without doubt, she dreaded an early offensive. "If she can keep us at bay this summer [1916]," I wrote, "what is

to prevent her deluging northern Italy in the autumn in the same manner as she flooded out Serbia last year?" My main point was, that our defensive, though not actually passive, was in no way related to any grand offensive idea. I thereupon set down twelve questions, among which the following are the more important:

"(1) Have our trench systems been planned in view of a future vigorous offensive?"

"(2) Have we, during the last eighteen months, been occupying our position too passively? The enemy, having complete liberty of manœuvre behind his lines, in February attacked Verdun. What did the Allies do in other parts of the line to unbalance this offensive? Were no steps taken because they were not prepared to assume the offensive? Apparently on our side it has yet to be learned that in order to frustrate an attack it is not always necessary to meet it directly.

"(3) Are our defensive lines planned with the idea of counter-attack, especially our rear lines? Are our troops massed in accordance with that idea? Are our reserves, men, munitions and material ready for immediate action? Are they mobile? Are our men trained? . . .

"(4) Our defensive attitude was assumed chiefly through want of numbers, and now that numbers on our side are superior . . . has it been readjusted so as to create a favourable opportunity for decisive action? Have our numerous 'nibbles' . . . been made with a definite object in view—namely, to improve the possibility of an eventual offensive; or have they been made haphazard on the principle: 'It's a fine day, let us go out and kill a Hun'?"

"(6) Has our trench warfare been looked upon as subsidiary to the ultimate destruction of the enemy's field armies? If it has, then, during the last weary year, have we been training sufficient men in field warfare? How many men have we had in the trenches and how many out training?"

"(8) Have we selected our defensive positions with a view to economising personnel, so that the power of our

offensive may be increased? Have we considered, when sitting in our trenches and ordering new ones to be dug, that every extra yard or two means one man less wherewith to strike a blow at the enemy?

“(10) Have our innumerable trenches been dug with the object of reducing the number of men required for the defensive in order to add to our general reserve or striking force?”

I then turned to the conditions which faced us, and examined them according to my system of principles. Under “Surprise” I wrote:

“If by surrendering to the enemy certain parts of our line, the seizure of which will strengthen our defence and weaken his, is it not folly not to surrender them?”

“In spite of such common-sense action, what do we find? We see a line maintained, every yard of which is viewed with the same greed as a miser views his gold. The Germans capture five hundred yards of our trenches . . . thereupon great indignation at this impudence resounds through our lines, so we pound away for weeks to get them back, irrespective of whether their loss has strengthened or weakened our position.

“True, it is always irritating to be driven out of our trenches, however useless they may be; but why wait to be driven out? Why not abandon to the enemy what is only an encumbrance to ourselves? The moral loss will then be insignificant. . . .

“If, as is well known, wire entanglement is of greater hindrance to an advance than even artillery fire itself, why is it that we make such poor use of it? Why is it that we do not construct it in places where it is little expected and where it will consequently come as a surprise? . . . For instance, we hold an interminable line of trenches, and nightly, at great risk to ourselves, we put up a little wire in front of it, which more frequently than not merely acts as a target for the enemy’s guns and draws his fire on to our trenches. Why not instead construct our entanglements

behind our trenches, where . . . we can put up acres every night? For this purpose, the ground in front of our trenches is generally limited to a distance of thirty to forty yards; behind them it is unlimited, and being so obviously the right place for wire, it is overlooked on account of our obsession that it is vital that not one yard of front trench must be surrendered. Why not instead occupy a front line, put up enough wire to protect it for the time being, dig a series of broad parallel trenches behind it; fill them with wire and then evacuate the front line and retire to one perhaps only two or three hundred yards farther back and lying behind these *sunken* obstacles? Again, in places where we have no intention of attacking, why not construct broad belts of entanglements, perhaps three or four hundred yards deep on the reverse slope of the ridge we hold? Then, if attacked, we can evacuate the front line and retire behind our protective obstacles."

The real difficulty was that we had no plan and, consequently, worked on no plan. We never could understand that "Trenches from which an offensive may be assumed must be defended by missiles; consequently, a continuous line is necessary." And that "Trenches which are purely defensive must be defended by obstacles flanked by fire; consequently detached posts (well-hidden machine-gun block-houses) are necessary."

Turning to the principles of "Security," I wrote:

"As the offensive is essential to the successful accomplishment of our object, it stands to reason that security without reference to the offensive is no security at all, but simply delayed suicide. Further, as I have already pointed out, every man needlessly employed on defensive work is a man the less for offensive operations. To avoid the excessive use of men for purely defensive work we have recourse to a very simple arrangement known as outposts, which is just as applicable to trench as to any other kind of warfare.

"Outposts perform two functions, the one—watching for the enemy, the other—delaying his advance, so that the

masses behind them may assume the offensive before the enemy can surprise them. We find this system of trench outposts to a certain extent practised in the French Army; but in our own it is not, the reason being—fear of losing trenches. Now the tactical value of a trench depends, (1) on the object, (2) on the ground and (3) on the enemy. Unfortunately, in many cases our object, which should be to destroy the enemy, merely consists in holding our front line, which is usually so close to the enemy's that offensive siting is out of the question, for what siting there is is the irregular product of battle.

“ I will now take the simple case of field outposts: An army of 250,000 men is on the march, and shortly finds itself confronted by an army of equal size. The Commander of this army first selects his line of resistance, that is, the line he can best delay the enemy on, whilst he prepares his offensive blow. Secondly, he disposes his force offensively to meet any attack, and lastly he details about one-eighth of his force, seldom so much as a quarter, to hold the line of resistance and push out in advance of it small groups and posts which will be sufficiently far forward to frustrate a surprise. These posts form the front line.

“ His whole idea is to whittle down the number of men used for protective and observational duties to a minimum, for the simple reason that these men will have to be withdrawn from the offensive mass and so will weaken it.

“ Apply this example to trench warfare: an army of 250,000 men relieves a section of trenches. . . . Throwing the above principles to the winds, its Commander takes over his section of trenches with the firm idea of holding it with a maximum garrison, namely, 125,000 in the trenches and 125,000 out, in relief rather than in offensive reserve. If by some good fortune he discovers that it is impossible to garrison them with more than 100,000 men, what does he do? Instead of relegating the remaining 25,000 to the reserve, he details them as working parties to dig more trenches, which when completed have to be occupied, and so are occupied by the men who have dug them.

“ If past warfare has proved that in the open seldom more than one-eighth of a force is required for protective

duties, it seems preposterous that in trench warfare, where defences and obstacles abound, sometimes as much as three-quarters of a force are in the trenches at the same time. . . .”

All these mistakes and squanderings were due first and foremost to a lack of clear thinking. Like Topsy, our trench systems just grew up. How they should have grown up I explained under “Co-operation”:

“A single system, even if unsound, is safer than a score of sound ones, because one system means unity, and several inevitably lead to dispersion of force. We cannot afford to regulate our defences on guerilla lines. Therefore, whatever the length of our front may be, it should be looked upon as *one* front—a single zone of possible attack. Once accepted as a unit, it should be divided into sections, the extent of each being arrived at after a careful study of the ground. Further, each section should, when possible, bear a direct relationship to the larger tactical units—Divisions, Corps, Armies, and all sections should be placed under the command of their own Generals and Staffs, who should be their permanent officials. The garrisons may come and go, but the Staffs will remain and will form the skeleton of the whole defensive system, the garrisons being the changing tissues. Thus [in Diagram 4], suppose A-B represents the total frontage and C, D and E the three tactical sectors of defence into which it is subdivided; then G, H, I will represent the three General Officers Commanding Field Defences, and J, K and L the three General Officers Commanding Field Armies, who, though they will supply G, H and I with the requisite garrisons, will in no way control the defence of C, D and E until such time as an offensive takes place, and then only in the zones of actual attack.

“Suppose that L is withdrawn and that M takes his place; this change will in no way affect the holding of Section C, for I will still remain, M simply carrying on L’s duties and not improvising new works on his own. What will be the result? A definite system of defence controlled

by the Operations Defence Staff of the C.G.S. and worked out by the General Officers Commanding the Defences. A definite system of training for the offensive controlled by the Operations Offence Staff of the C.G.S. and worked out by the General Officers Commanding the Field Armies, who will in no way be encumbered by defensive operations. When the time comes for the attack to be launched, J, K and L will each assume command of their own frontages, G, H and I still controlling such positions as are held defensively. The result of such a system will be unity of action based on the requirements of the whole defensive line as a unit; a defensive policy and a cessation of the patchwork system of defence; one defence scheme for the whole line and all sectional defence schemes based on it; continuity of system, continuity of work, security and an immense saving of unnecessary labour.

“What do we see to-day? A long wandering line, the accident of battle, held by a series of Armies, Corps and Divisions, each of which works out its defence scheme as if its own small frontage were the whole line, and its own salvation the object of this war. In time each is replaced by some other unit, which institutes some new system; each, as chance dictates, improving, spoiling or abandoning the work of the unit it relieved. No unity of action, an endless string of changing ideas, no continuity of work or system, a labyrinth of trenches and a colossal wastage in personnel and material.

“Until each section is organised under its own fortress commander and ceases to be a mere tactical caravanserai, the offensive will languish; for it cannot be carried out effectively on the principles of partisan warfare—each unit indulging in separate operations on its own or hesitating to do so for want of faith in the Commanders on its flanks. . . .

“In one word, organise. Look upon the trenches as defended barracks, to and from which units will come and go without altering rules, structure or accommodation; and not as mere camping-grounds where each man selects his own pitch. This will lead to co-operation in its highest sense, for not only will all know what they have to do,

but all will know that, as they are part of one system, those on their flanks will equally know it, and that all will act together accordingly on one plan and not on a hundred and one, irrespective of reliefs, irrespective of changes."

These notes are of interest when referred to the great battle which was then in preparation, namely, the Franco-British offensive in the area of the Somme, projected as a counterblast to the battle of Verdun, which had been launched by the Germans in February, and which was still raging in May when I returned to the 37th Division. They are interesting because this battle was rendered abortive more through lack of offensive training on the part of the British and French troops than through any other cause. Ever since the battle of Loos, our men had been employed on defensive work. So inoffensive had they grown that, when in the open, they were incapable of using their rifles, and when their supply of hand grenades—a trench weapon—was exhausted, they surrendered as if they had been unarmed.

Lack of time in which to prepare cannot in this case be urged as an excuse, for the battle of the Somme was first conceived in the autumn of 1915, and when I was still in the VIIth Corps, I remember taking part in a Staff exercise based on a project of this attack. The problem then was an attack from the village of Maricourt on the right to that of Hébuterne on the left—a blunt salient with its apex about Fricourt. Examining this frontage on the ground as well as on the map, I saw clearly that its key was Thiepval, a village occupying the western extremity of a ridge of ground which ran roughly parallel to the lower limb of the salient, and from where the left half of the upper limb could be enfiladed. So long as Thiepval was held by the enemy, the ground north of it could literally be raked by fire.

On April 28 the VIIth Corps was ordered to prepare for an attack on Gommecourt at the end of May, and, on the

10th of that month, the 46th and 56th Divisions, which had been sent to the Corps, took over the trenches west of that village: the 46th on the right of the 37th with the 56th on its right. Then the attack was postponed in order to push our front-line trenches nearer to those of the Germans, which definitely informed them that an attack was in preparation. The result of this was an increasing activity on the part of the enemy artillery, which, on June 10, heavily shelled Larbret Station and the village of Laherlière immediately south of Bavincourt and at a range of some nine to ten miles.

When this bombardment opened I was sitting in the General Staff office, and Colonel B. Vincent, G.S.O.I., asked me to go to Larbret Station, which was only two miles away, and see what was taking place. At this time it was the last day-railhead on the Doullens-Arras line, for trains were allowed only to proceed east of it under cover of darkness. It was consequently an important station. On arriving there at 9.25 a.m., I found a sentry walking about according to book; that is, "in a brisk and soldier-like manner." On seeing me he presented arms and shouted: "Guard, turn out!" At the station, 200 yards away, shells were falling, three trucks of flax were blazing and a large stock of rations was on fire. Then the Sergeant appeared and was about to fall in the guard and no doubt report, according to book, "No unusual occurrence," when I ordered him to double half his men on to the main Doullens-Arras road, close by, and stop every officer, soldier and civilian coming along it and double them to the station, to which I went with the remainder of the guard. By this means, within a few minutes, we collected some twenty to thirty human beings and got the flaming trucks uncoupled and shifted away from a petrol dump, which we covered over with tarpaulins.

It was not a particularly pleasant piece of work, for shells were falling all the time, and they were fairly large ones. But in this small event what appeared to me to

be most instructive was the total incapacity of our soldiers to think for themselves. Here was a guard placed over an important railway station, its object being to protect it. This station is shelled, and all that guard can do is to present arms. It was not that these men lacked courage; the fault lay in their lack of wits. They had no doubt been taught in the parrot-words of the regulations about arresting "unauthorised persons," but they had been taught nothing about unauthorised shells; consequently, when the shells started destroying the station, they did nothing, because a shell is obviously not a person.

Nor was my instruction to end here. Having moved the trucks and covered over the petrol, I walked towards what had been an Ordnance hut and a R.S.O.'s (Railway Staff Officer) office, for both were in ruins. On approaching one of them, I saw a pair of legs sticking out of the debris, and as they moved I called out: "Are you hurt?" To which came the answer: "No!" Then a dishevelled individual wriggled himself clear and explained to me that he was the Ordnance clerk; that his hut had been hit and that he was looking for the office rubber stamp, without which no indent was valid. Here was a man risking his life for something not worth twopence, whilst his stores were on fire!

A few days after this ridiculous event we received orders to fill the greater part of our front-line trenches with chlorine-gas cylinders. This we did on the night of the 16th/17th, a most unpleasant task, which entailed roping in every available man out of the line, including batmen, grooms, etc. The cylinders were brought up in lorries to the village of Hannescamps and from there distributed by carrying parties. In the end it proved more of a nuisance than it was worth, and it had a demoralising effect on our men. It is bad enough to occupy a front-line trench at any time, but to occupy it when it is filled with gas cylinders is damnable. Not only do they ooze gas, which

is most unpleasant; but if struck by a shell, there is no chance of getting away alive. I remember, a few days after this installation was made, visiting the front line east of Hannescamps with Captain W. P. Buckley, the G.S.O.3, when we were caught in a heavy local bombardment. Though 5·9's were falling close and covering us with a fine meal of earth, as we sat on the fire step, we did not mind these nearly so much as the chlorine cylinders immediately behind us. In my opinion cylinder gas is far more bother than it is worth.

Thus the days passed by in preparing for the great attack. Then came the final Conference at VIIth Corps Headquarters, at which Divisional Commanders and their G.S.O.1's were ordered to attend. In the case of the 37th Division, I went also, because Vincent was somewhat deaf. It was a typical Conference. To begin with, the Corps Commander delegated his responsibilities to his Divisional Commanders, who explained how they in turn would delegate their shares in his responsibilities to their respective Brigadiers, who, had they been present, would have delegated their shares to their Battalion Commanders, until in the end, a trembling line of Platoon Leaders, Sergeants and Corporals would have the entire responsibility loaded upon their shoulders.

Command, the prerogative of the Generals, having been atomised, a trivial discussion arose on what the men should eat before they went over the top. Eventually it boiled down to a choice between pea soup and porridge. Berkeley Vincent was straining to hear what was being said. He was a highly educated officer, a great strategist and had been attached to the Russian Army during the Russo-Japanese War. Dreaming of some cunning penetration or overwhelming turning movement, and hearing nothing but a jumble of voices, suddenly, as a lull in the conversation occurred, he turned to me and whispered: "What has been decided on?" And I, for the moment forgetting that he was deaf, replied: "Pea soup." "Pea

soup?" he exclaimed incredulously. "What do you mean?" But the final Conference was at an end and "pea soup" was the decision. A gathering of Battalion cooks would, I think, have displayed certainly an equal generalship.

The attack had been fixed for June 29, the bombardment opening four days earlier. Then it was put forward to July 1, on which day the only part the 37th Division had been allotted to play was to release gas, were the wind favourable, and render artillery support to the 46th Division, which was to attack the village of Gommecourt from the north, whilst the 56th Division attacked it from the south, the idea being to pinch out the salient.

Zero hour was fixed at 7.30 a.m., and as I had nothing in particular to do, I got up early and went by car to Bienvillers-au-Bois and thence on foot by road and trench to the northern margin of the village of Fonquevillers. There I took up a position from where I could view the attack of the left Brigade of the 46th Division, namely the 139th. When I arrived, an intense bombardment was in full swing, and so much dust and smoke covered the Gommecourt salient that it was difficult to see anything clearly. At five minutes to zero a somewhat scattered smoke barrage was put down, then came the attack over no-man's-land. I cannot say that I saw it. All I can vouch for is that a little later on through my glasses I did see several groups of men, presumably of the 139th Brigade, moving towards Pigeon Wood and La Brayelle Farm. Some time after this I moved south into the village and found most of the communication trenches leading east of it blocked with men. At the time I did not take much notice of this, for I was more interested in the rumours which were coming in that the attack had failed, and that the failure was due to the front line being drunk. Later on I learned that the main cause of failure was the bad handling of the reserves. The first wave of the attack passed over the German front line and support trenches

and did not pause to clear up their dugouts, this duty having been allotted to the second wave. That wave, in its turn, in place of advancing over the top, had advanced up the communication trenches, which soon became churned into quagmires. Much time was thus lost, and a counter-barrage falling between it and the first wave, little or no progress was made; hence the congestion in the communication trenches. The result was, the first wave was attacked in rear, cut off and captured.

As regards the allegations of drunkenness, I, personally, saw no drunken men; but it was a fairly common custom, and definitely a bad one, to issue a tot of rum to the attackers before they went over the top. As in many cases men intentionally avoided eating before a battle, for fear of being shot through a full stomach, rum went into empty stomachs, which must in many cases have led to drunkenness. In the 46th Division, common talk explained that the order was to issue a rum ration to the first and second waves, but through some error the whole of it went up to the first wave, which, consequently, received a double dose. If this is true, many of the men in the front line must have been drunk well before zero hour.

Once launched, this battle, like so many others, became a veritable Moloch. The casualties were appalling, some 60,000 on the first day alone, and the problem, as always, became one of reinforcements—human fuel for this man-devouring monster. The 37th Division was still intact, yet instead of withdrawing one of the shattered Divisions to replace it, it was broken up, the 110th Brigade receiving orders on July 5 to relieve a Brigade of the 21st Division. Then a few days later the 111th and 112th were also moved south. This, in my opinion, was unfortunate, for not only did it deprive Count Gleichen of his command, but it was in no way fair on his three Brigades, which were hustled into new Divisions the Commanders of which were unacquainted with them and whose ways were new to them.

On the 7th, at 9.20 a.m., we heard that Lord Kitchener had been drowned, the telegram reading: "G.422, 7th: It is officially announced that H.M.S. *Hampshire* on her way to Russia with Lord Kitchener and Staff was sunk off the Orkneys 8 p.m. 5th inst. It is feared there are no survivors."

The next day, when I happened to visit Third Army Headquarters, I was shown what seemed to me a most extraordinary document. Its first paragraph read: "Our immediate objective is still the Thiéval-Ginchy Ridge," and its last: "It is of the highest importance that all Commanders in touch with the enemy shall watch the state of his *moral* closely, and be guided in their actions by their judgment of it. Against a demoralised enemy valuable time may be gained, and life saved in the long run, by acting very boldly and accepting risks which it would be folly to incur under different conditions. To form an accurate estimate of the enemy's general state of *moral* is, however, difficult, even for Commanders in close touch with him, and it is of such importance not to commit one's troops to what may be a hopeless enterprise that no precautions must be omitted, even in following up a beaten enemy, until it becomes fully evident that his powers of resistance have quite broken down"—an excellent example of G.H.Q.'s method of blowing hot and cold in one and the same breath.

Then four days later, on the 12th, began those stimulating appeals, which, during the next year at Ypres, became the laughing-stock of the attacking units and formations.

"... There is justification for feeling confident of breaking through the remainder [of the enemy's defences] in the near future and inflicting a heavy defeat on the forces opposing our advance. Then, with superiority of force on the side of the Allies, and with the enemy's reserves practically all used up and many of his troops already beaten, we

shall be in a very favourable position, and the Armies on our defensive front may expect to have opportunities of reaping the benefit of their self-denial and of the efforts they may have made to ensure victory."

"Self-denial" may sound very virtuous, yet we were thankful that so far we were out of the shambles. Then we were told:

"The enemy has already used up most of his reserves and has very few now available. . . ."

"The battle is, in fact, already more than half won. What remains to be done is easier than what has been done already and is well within our power."

"Let every attack be pushed home to its allotted objective with the same bravery and resolution as on July 1. . . ."

"There is no room for doubt that steady, determined, united, and unrelenting effort for a few more days will definitely turn the scale in our favour and open up the road to further successes which will bring final and complete victory within sight."

Thiepval, the key to the battlefield, did not fall until September 27, when it was captured by the 18th Division. The battle continued until November 30, and in casualties it cost us 498,000 officers and men. On what facts and calculations were these optimistic appeals based it is impossible to know.

On the 16th, the 37th Division having ceased to exist as such, I was instructed to report myself to Third Army Headquarters, then at St. Pol, to take over the appointment of G.S.O.2. On arriving there the following day, Colonel S. E. Hollond (usually known as "Tom"), the G.S.O.1, congratulated me upon rejoining the British Army. Be this as it may, though I had enjoyed my six months with the 37th Division, I was not sorry for

a change, and it appeared to me that, though an Army Headquarters was farther from reality than those of a Division, one's prestige rose as one climbed the hierarchical ladder.

Sir Edmund Allenby was in command, a man I grew to like and respect. His Staff was the most harmonious I have ever served on. Major-General L. J. Bols was M.G.G.S.; Major-General A. F. Sillem, head of A. and Q.; "Tom" Hollond G.S.O.1 and Captain T. J. Uzielli a Staff Officer on the Q side. There were, of course, a legion of others, but these few were those I mainly came into contact with.

My immediate "boss" was Hollond, exceptionally charming, never rattled and never given to take things very seriously. He was a Rifleman, knew everybody and the ways of the Army to their ultimate absurdities. Should we want G.H.Q. to do anything, Hollond was sent for; I usually drafted the letter whilst he sat down at the telephone and called up some friend on the Staff of each Army Headquarters in turn and asked each to do likewise. Thus whilst a single appeal would have been valueless, an irresistible pressure was brought to bear upon G.H.Q. Should three or four of the turbulent Barons simultaneously urge the same course of action, they must be right. As in politics, numbers were the decisive factor, and Hollond knew this.

In the office we sat on the opposite sides of a large table, and the morning ritual was as follows: He would open all the letters, glance at their contents and then push envelopes and papers over to me. I sorted out those I felt I could rationally answer and pushed the others back to him; whereupon he would push them into the waste-paper basket. On the first occasion I was a little taken aback, and asked him if he were not going to reply to them. He answered: "If you can't deal with them, I can't; besides, there is far too much paper floating around, and people forget what they have written as soon as they have

done so." This system worked marvellously well: seldom did we get a reminder, which proved clearly that Hollond was right.

Meanwhile the battle of the Somme continued—a grim and grinding agony. Units came and units went; they moved southwards with ranks bulging, and a little while later they moved northwards a thin, lank host. My particular job was to arrange for these dual movements, and by November 23, when the battle was virtually at an end, I had written 109 march orders. On the back of them I always printed a plan of the area the units were to spend the night in, showing the maximum accommodation in each village, or section of a village. This was a real assistance to the billeting parties, for at a glance they could tell what each area held. Little common-sense "brain-waves" like this and not a meticulous adherence to regulations are the true proofs of good Staff work.

Towards the middle of August strange rumours of some new weapon of war were whispered around our small mess, one of some dozen in St. Pol. There a sapper officer, Captain F. H. E. Townshend, informed me that the weapon was an armoured machine, a tracked car, and that a number had arrived at Yvrench, a village to the east of the Forest of Crécy, and consequently a propitious starting-point for what these machines actually were—the tanks. Under obligations of the profoundest secrecy, Townshend and I obtained permission to visit Yvrench, and off we went by car on, if I remember rightly, the afternoon of August 20. As we approached the area, more and more did it assume the aspect of Epsom Downs on a Derby morning. There were scores and scores of cars there and hundreds and hundreds of spectators, both English and French. Everyone was talking and chatting, when slowly came into sight the first tank I ever saw. Not a monster, but a very graceful machine, with beautiful lines, lozenge-shaped, but with two clumsy-looking wheels behind it.

About a fortnight before this visit Townshend had asked

me to read a short MS. he had written; he called it "The MS. in Red Ink," a title which had nothing to do with its contents, but which referred solely to the fact that it was written in red ink. The idea developed in it was as follows: eighty per cent. of the German forces on the Western Front was occupying an area some 500 miles long, and yet only five miles deep. On a small scale map this area could be represented by a line drawn with a blunt-pointed pencil. Strategically and tactically this distribution of force was ludicrous; for to win the war all that was necessary was to advance five miles on a front of, say, 100. Were this done in the space of a few hours, nothing could prevent us winning the war. Townshend did not even hint how we were to do so; but what he did suggest was that the starting-post of victory was how to see the problem in the abstract, and that once the problem was clearly seen, sooner or later the means of winning the war would be discovered. His logic was perfectly sound.

As the tank approached us, Townshend and I simultaneously looked at each other and exclaimed: "What price 'The MS. in Red Ink'?" Here was the unknown x in the equation of victory. All that was now necessary was to get people *to see* the problem.

Townshend had gone straight for the problem, and had completely ignored the means. He had shown how the war could be won in twelve hours, but not with what it could be won. To some to-day, certainly not to all, the "how" may seem unimportant and the "with what" essential, yet here at Yvrench, in August 1916, was the "with what," obvious, concrete and unmistakable to anyone who could understand the problem of victory and see the end beyond the means. Yet for over fifteen months after that date, scarcely a glimmer of what the problem was scintillated through the Allied strategy and tactics, and even to-day to many it remains as occult as the philosophers' stone. "The MS. in Red Ink" was a little work of art.

Though, whilst serving on the Headquarter Staff of the Third Army, I had nothing to do with tanks, and noticed them only when they were mentioned in some battle report, I was destined within a few months to be so closely connected with them, that some mention of their early doings may not be out of place here.

The first G.H.Q. instructions on the tactical employment of tanks were published in August, 1916, and make common-sense reading. In them it was laid down that there were four ways of using these machines: (1) the advance in line, which depended on large numbers; (2) the attack in groups, or pairs, against selected objectives; (3) their use for hauling guns, stores, etc.; and (4) their employment as mobile light artillery. Infantry were closely to co-operate with them, and their advance was to be covered by a barrage of shells.

At first they formed part of the Machine Gun Corps, and were known as—"The Heavy Section."¹ The contingent sent out to France consisted of a Headquarters, three and a half Companies and a Quartermaster's Establishment and workshops for each Company. A Company consisted of a Headquarters and four Sections of six tanks each, with one spare tank. The establishment of a Company was 28 officers and 255 other ranks. The tanks were divided into two categories—Male and Female—the first carrying two 6-pounder guns and four Hotchkiss guns, and the second five Vickers machine guns and one Hotchkiss gun. Males and Females were to operate in pairs, and each tank crew was 1 officer and 6 other ranks.

As regards the machine itself, it weighed 28 tons, had a maximum speed of four to five miles an hour on the level and about two when climbing or on broken ground. It could surmount a parapet five feet high and cross a gap ten feet wide. Wire entanglements were no obstacle to it, and it could push over trees up to 18 inches in diameter.

¹ Later on called "The Heavy Branch."

It was decided by G.H.Q. to allot the Heavy Branch to the Fourth Army for the operations which were to take place on September 15, and in accordance with this decision, on the 11th of that month, tanks were distributed to Corps as follows:

(1) XIVth Corps—C Company, less 1 Section, (18 tanks).

(2) XVth Corps—D Company, less 1 Section, (18 tanks).

(3) IIIrd Corps—1 Section D Company, 1 improvised Section, (12 tanks).

(4) Reserve Army—1 Section C Company, (5 tanks).

In actual fact these were not the exact numbers which went into battle, because between the 11th and the 15th there were several mechanical breakdowns. On the night of the 14th/15th, forty-nine machines moved forward from their positions of assembly, but only thirty-two reached their starting-points. Considering that this was the first battle test ever carried out, the few tanks which came into action were remarkably useful, and one tank, near the village of Flers, by travelling along a trench, compelled the surrender of some 300 Germans. Thus was initiated a new form of fighting, a form destined to revolutionise land warfare as fully as the introduction of steam had revolutionised naval warfare. Though G.H.Q. could not see this at the time and never saw it during the war, the enemy who came in contact with these novel machines did see it. On September 16 we find the Chief of Staff of the German Third Army Group writing: "The enemy . . . have employed new engines of war, as cruel as effective. No doubt they will adopt on an extensive scale these monstrous engines, and it is urgent to take whatever measures are possible to counteract them." But on the German G.H.Q. this warning was lost. In October they suggested digging tank traps and cutting wide trenches across roads; in fact, they had no idea that they were confronted, not by road, but by roadless warfare. Meanwhile on this same date our

daily press could see no more than the comic side of the new way of fighting. The *Evening News* talked of "mechanical centipedes," and Mr. W. Beach Thomas of "humorous Juggernauts" and "their greed for wire and houses as fodder."

At this time, however, my thoughts were not directed towards tanks; rather was I looking in the opposite direction—that is, towards improvement in infantry tactics. Hollond had, if I remember rightly, been on the Staff of the 9th (Scottish) Division. Anyhow, it was this Division which was the first seriously to tackle the problem of infantry formations in the attack, the idea being that each Company was to be a self-contained unit "in so far as capturing, consolidating and carrying" was concerned, and that each Platoon was "to be divided into 4 self-contained fighting sections of 10 men each." Both Hollond and I were deeply interested in this problem, and it was he, I think, who persuaded General Allenby to send Brigadier-General A. Solly-Flood to the Third Army School in order to carry out experiments in new infantry formations. This was done, and he agreed with me that advances in waves, that is, in line formations, were not suitable to rifle warfare, and should be replaced by "worm" or single-file formations, such as I had made use of in my Company training at Aldershot in 1912-13. The reason for this is an obvious one: over a Section of ten men extended at five paces interval a leader has no control, while if at the head of a file of ten men, each one a pace or two behind the other, he has almost complete control, especially if he places his most reliable soldier as a whipper-in at the tail-end.

Solly-Flood agreed to this, but G.H.Q. did not. Sir Douglas Haig and his C.G.S., Lieutenant-General L. E. Kiggell, instinctively disliked change, and when these experiments were finished they were ruthlessly turned down. On February 7, 1917, the five Army Commanders were told: "After considering the numerous recommendations received regarding the organisation of the Infantry

Battalion, the Commander-in-Chief has decided generally to adhere to the organisation as it stands, and directs that no fundamental change is to be made in the authorised organisation of an Infantry Battalion. . . ." This was too much for "Tom" Hollond, who at once sat down to his telephone and roused the turbulent Barons. What was the result? On the 14th another letter was written stating: "In the special circumstances of present warfare the Commander-in-Chief is of opinion that it has become necessary to modify the provisions of Section 114, Chapter IX—'Infantry Training'—in so far as the attack is concerned, and that it will be advantageous, under existing conditions, to lay down a normal formation for the attack." Though this formation did not include single-file movement, what a confession of impotence! The expression "special circumstances" is truly delightful: was this, then, a special war?

Whilst these experiments were being made, I was engaged upon thinking out our defensive arrangements for the winter. I pointed out in a long memorandum that, during this period, the maximum use should be made of weapons and the minimum of men, in order to increase our strength once the winter was over. I wrote: "Though weapons require men to wield them, this is not a contradiction if those weapons which require the fewest men in their working are used. These weapons are: guns, trench mortars and machine guns. To these should be relegated the active operations of the defence, whilst in rear the majority of the infantry are actively training for next summer's offensive. During the winter we have, therefore, to concentrate on two problems: (1) holding the line defensively and (2) training men offensively."

In this memorandum I also dealt with a new subject, which I headed: "Offensive - Dugouts and Parados Defences." This section reads as follows:

"The defensive dugout is either excavated or mined;

it has one or more exits usually leading into the same trench. All egress can be prevented by one man standing at each entrance and bombing or threatening to bomb down it. Being passively defensive, it is constructed on a wrong principle, for true defence is based on the counter-attack. In order to render this possible the following principles must be observed:

“(1) Every underground shelter must have two entrances.

“(2) These two entrances must never lead into the same trench.

“(3) One of these entrances must lead into a small work, or trench, sufficiently close to the parados to command the fire trench in front of it.

“Dugouts constructed on these lines become offensive posts of resistance instead of passive defensive shelters. Once the enemy enters our fire trench, the garrisons of these posts can bomb the trench; thus its occupation, in place of adding to the enemy's security, simply places him at a disadvantage.

“Accepting it as a principle that all trenches should act as shields when held and as obstacles when lost, it would appear that up to the present too little ingenuity has been concentrated on the latter requirement. To-day, if a trench is lost, the garrison retires to the next line and bombing attacks are made up the lost communication trenches. This is wasteful in time, men and in endurance. . . . The difficulty can be overcome by constructing small works immediately behind the parados of the fire trenches and on the flanks of the communication trenches, from which frontal and enfilade fire can be developed. In other words, an enemy who has entered a trench should be penned up in it and attacked *from above* and *not from within* the trench itself. In order to advance he will have to storm the parados, a difficult task if the trench is deep and the parados is well wired. . . .

“Each parados post should be centred round a mined dugout from the rear entrance of which a narrow trench should run up to immediately behind the parados, which



TANK CORPS H.Q.; BERMICOURT CHÂTEAU.

should be so sloped away in places as to permit direct fire being poured into the trench below. . . . Parados posts should be sited in order to:

- “ (1) Protect main avenues of approach.
- “ (2) Bring enfilade fire to bear along entanglements.
- “ (3) Seal up certain sections of the front line and so disorganise an attack which has penetrated it.
- “ (4) Protect the flanks of the counter-attack.
- “ (5) Provide fortified shelters for look-outs, O.P.s, machine guns and trench mortars.

“ Broadly speaking, when the whole system of defence is considered, the deep fire trenches are the main defence and offence trenches and the parados posts are subsidiary defences to these. Until lost, the former should always be the day fighting trenches; but at night-time, as the protection they afford against raids is often precarious, the garrisons of the front line should retire to the parados defences. . . . If they do so, then their dugouts will not only act as defensive shelters, but will become veritable little citadels which will have to be stormed.”

I explained all this to the Chief Engineer, who was a dear old man; but as he had some forty years' service he was completely bemused. He could not see how a dugout could assume an offensive rôle, nor why it should be an advantage to have the back-door at the back of the dugout instead of alongside its front door. Consequently my suggestion was not adopted; nevertheless, by some R.E. oversight, part of it crept into the post-war *Engineering Manual*.

At about the time I was arguing with him, the Heavy Branch of the Machine Gun Corps was placed on a more permanent footing. On September 29 Lieutenant-Colonel H. J. Elles was appointed Colonel Commanding it, and on October 8 its provisional establishments were approved, and Captain T. J. Uzielli was transferred to its Headquarters at Bermicourt as D.A.A. and Q.M.G. Two months later,

as a G.S.O.2's appointment had by then been added to it, Elles looked round for someone to fill it, and, on Uzielli's suggestion, decided to ask for me. This happened about the middle of December, and as my appointment was approved on the 26th of that month I bade good-bye to my many friends at Third Army Headquarters and proceeded by car to the Château of Bermicourt, arriving there about tea-time. For me cattle-wire and spade were done with for ever, and though I did not realise it at the time, only now was my career as an unconventional soldier to begin.

CHAPTER IV

THE POTTER'S WHEEL

BERMICOURT lies in the centre of an arc formed by the Ternoise stream, which rises a little east of St. Pol and flows into the River Canche at Hesdin. It is situated about half a mile north of the great road linking these small towns, which then runs westward to Montreuil and Etaples and eastwards to Arras and Cambrai. It is a pleasant enough spot, perched on the high ground from where northwards one can look out towards Tramecourt and Azincourt (Agincourt); no bad place for the Headquarters of the modern knights in armour.

The château was of the normal Versailles type, not large, but, as usual, one room deep and, consequently, somewhat cold in winter. I entered what had been the drawing-room, now the ante-room of the Headquarters' Mess. There I found Elles standing by a Canada wood-stove, home-made, and giving forth a terrific heat. Last time we had met was as students at the Staff College; but he being in the Senior Division and I in the Junior, we knew little of each other then. After a preliminary greeting, he said to me: "This show badly wants pulling together; it is all so new that one hardly knows which way to turn. I want you to do this: to put some discipline, some *esprit de corps* into the men; then we shall have a wonderful show." Uzielli came in and several of the other officers on the Staff, so I may as well describe those with whom for twenty months I was destined to spend a very happy though strenuous time.

Elles was a sapper, a year or two younger than myself; in fact, I was the oldest member of the Staff proper, and at this time I was a little over thirty-eight. He had had a

varied career since the war began. In August 1914 he went out with the 4th Division and, in 1915, passed on to G.H.Q. Then one of those whims of chance first brought him into contact with the machine which was to make his name, for early in 1916 Sir Douglas Haig sent him to England to inquire into the "land ships" mentioned by Mr. Winston Churchill in his historic paper entitled "Variants of the Offensive." He was a remarkable man, fearless, full of common sense, a good picker of subordinates and the possessor of a wonderful tactical eye. Yet I think that his main contribution to the Heavy Branch was, what the French would call *esprit de cocarde*. Not that spirit of association which *esprit de corps* expresses, but that flair, *élan* and dash, that indefinable manliness which became its spirit. To both officers and men he was what Henry IV of France had been to his soldiers: boyish and reckless in danger; perhaps a better soldier than a strategist, yet one who could profit from the co-operation of his advisers and who was universally loved and trusted by his followers. *Ralliez-vous à mon panache blanc ; vous le trouverez toujours sur le chemin de l'honneur*, was as much his motto as it was that of Henry of Navarre.

Under Elles, then a Colonel, came Uzielli and myself, and no two more different men could have been found to work together; yet our differences were really complementary. "Theo," as we called him, was one of those exceptional people who can tolerate a fool without committing a folly. Suave yet fearless, tactful and yet truthful, as head of the "Q" side, he never left the Tank Corps, as the Heavy Branch eventually became, in want. His decision gave it what it asked for, and his prevision cut down this asking to a minimum. He was ably seconded by Captains H. C. Atkin-Berry and R. W. Dundas.

Under myself came two equally remarkable officers, Captains G. le Q. Martel and F. E. Hotblack. The former was a sapper, and the latter, I believe, a brewer when the war began. The one was a noted boxer and



MAJOR-GENERAL H. J. ELLES AND COLONEL T. J. UZIELLI.

the other distinctly artistic. Both were fearless to a degree, Martel constitutionally so and Hotblack conscientiously so; that is to say, he could control his nerves through sheer power of will. Such success as I had, I owe more to these two men than to any others. Hotblack took over intelligence work and Martel assisted me in operations.

On the engineering side, which, though not part of the Staff organisation, was virtually treated as such, came Lieutenant-Colonel F. Searle, Chief Engineer, under whom worked Major G. A. Green and Major J. G. Brockbank. Searle was a highly skilled organiser and, consequently, at daggers drawn with military rituals, which to him were inexplicably absurd. He based his work on a few simple principles and drove the engineering side of the Corps forward like a battering-ram of steel. By many he was not greatly liked, yet without his persistence we should have accomplished nothing.

So far some of the men with whom I had to work, and now for the work itself.

On the day after my arrival I set out on a reconnaissance. I motored round the whole of the Heavy Branch area and visited the four Battalions then being formed. A was at Humières, Eclimeux and Bermicourt; B at Sautrécourt, Pierremont and St. Martin Eglise; C at Erin and Tilly Chapelle; and D at Blangy. Frankly, I had never seen such a band of brigands in my life. The reason became apparent directly I was told that recruitment had been opened to the whole Army in France, for this naturally meant that every disgruntled man or "impossible" soldier had sought an escape from his surroundings by applying to join the Heavy Branch. There were cavalrymen, infantrymen and gunners; A.S.C. men, sappers and actually a sailor, though how he had found his way to Bermicourt I cannot say. There were men in trousers, men in puttees, men in trench boots and men in kilts. There was every type of cap badge and deficiency in cap badges: the men looked exactly what they were—the

down-and-outs of bawling Sergeants and unfriendly Corporals.

On returning to Headquarters, I metaphorically burnt *The King's Regulations*; for obviously there had already been too much of that book in their lives. I walked over to Uzielli's office and said: "I have just been round the Battalions, and as regards instilling any form of discipline, as Elles has asked me to do, that is your job, and not mine." Then I explained what I meant by this somewhat cryptic remark. "These men must be properly housed, properly clothed and properly fed. They must be bathed and scrubbed and cleaned up, and not until then can I set to work." We soon got going. On January 1, 1917, baths and a laundry were opened at Blangy: the first in charge of a Sergeant, a Lance-Corporal and eight Privates, and the second under one forewoman, twenty washer-women, ten women ironers and four women menders, whose services were obtained locally. The arrangements made enabled 450 men to have a shower bath each day, and a bath every eighth day and clean underclothing as well. Thus the roots of discipline were dug into the only soil which will fertilise them; not desire for reward or fear of punishment, but instead—personal comfort and cleanliness. Soap was our starting-point.

I cannot recount here all the things Uzielli did, the coffee-bars, canteens, fixed and mobile, etc., etc., which he established; but the coping-stone to this work was a distinctive Corps badge. One was devised in England, by whom I do not know, but certainly no artist; for it resembled a swordfish ramming the stern of a whale. We turned it down and sent in our own design, which, on February 6, was approved. Meanwhile, on January 18, we issued a coloured shoulder strap to each Battalion: A red, B yellow, C green and D light blue.

Whilst all these things were being done, and whilst the men were taught gunnery, driving and tank maintenance, I set out to solve three main problems. The first was to

moralise the men; the second was to instruct the officers, and the third was to assist in reorganising the whole, so that the maximum tactical power might be developed.

The solution of the first problem was the least difficult; for private soldiers, if handled sensibly, are always easy to deal with and to impress. To every Company I gave four lectures, that is forty-eight in all: one each on discipline, *moral*, leadership and *esprit de corps*. These were quite unconventional and referred to no published regulations, and I felt they appealed to the men. I have no space here to quote from them, and, even if I had, extracts would be of little interest; for in a lecture or simple talk, it is not what you say that matters half so much as how you say it. Words are but the high-tension wires of the spirit, the means of charging a vast number of human accumulators from one dynamo. Most of these lectures were given in barns lit by a few candles. One I remember giving in the schoolroom at Blangy, lit by a solitary oil lamp, which went out shortly after I began. The rest of this talk took place in pitch darkness, and I still believe it was the best I have ever given.

The training of the officers was a more difficult task. It always is so, because they are better educated and consequently less receptive to new ideas. This generally means that they have to be de-educated before re-educated. The difference may be compared to building a new house or reconstructing an old one. The latter frequently possesses greater charm and the former greater utility. Fortunately, in this problem I was confronted by so many arms of the Service, and so many of the officers were temporary soldiers and, therefore, not permanently spoilt, that re-education was possible in the extremely short time at my disposal; for we could not expect to prolong the training beyond March. As it happened, we had to abandon it long before that.

I made up my mind to start from the very beginning, to put all Captains and upwards through an indoor exercise,

and later on an outdoor exercise as well, in which the minutest details would be discussed. Nothing was to be left to chance or unexamined. As a basis I took the Vth Corps' attack on Beaumont Hamel, in which tanks had taken part, and worked through it step by step. The first phase of this exercise was issued on January 10 and the last about a month later, the whole covering thirty-four foolscap pages, which, as the scheme proceeded, were duplicated and issued to all concerned with the agreed solutions. Scores of subsidiary problems, more especially of an administrative nature, were worked out in detail. I take no credit for the result, which during the following twenty months was quite extraordinary, because this exercise was in every sense of the word a co-operative piece of work, each officer taking part in it giving something of value towards the common solutions. I say the results were extraordinary, because during the many battles which faced us very few new problems arose; consequently this exercise was a real intellectual foundation to our training.

My third major problem was one I shared with the General and the rest of his Staff. It was a stupendous problem, embracing as it did the control, internal organisation and equipment of the Heavy Branch. I have described how the tank units arrived in France in rudimentary Companies. By the end of September, though in theory these still existed, in practice they had virtually disappeared, for tanks were being used in driblets of ones, twos and threes, and there is no more certain way in war of disrupting an organisation than the tactical mishandling of it; for then, in fact, it becomes a ceaselessly changing improvisation. It is like expecting men to drill properly to unfamiliar words of command; something takes place, and that something is usually confusion.

First of all the control of the Heavy Branch was multi-lateral—it had not one, but some ten to twelve drill-masters shouting at it all at once. Theoretically it came under G.H.Q., and G.H.Q. came under the War Office;

but in actual fact, as there was no tank adviser or representative on the Commander-in-Chief's Staff, it dealt with each branch separately, and separately also with the War Office and the Ministry of Munitions. With the War Office it did not deal with one department only, as no Tank Department was established there until August 1918; but with the Director of Staff Duties on questions of policy, organisation and training; with A.G.9 for officers and personnel; with the Director of Supplies and Transport for mechanical transport and workshops; and with the Director of Artillery for armament.

It was a terrific hodge-podge, in no way disentangled when, in November, General F. Gore Anley was appointed Administrative Commander of the Heavy Branch, with Headquarters in London. Though a pleasant little man, the problem was in inverse ratio to his size. I had met him as a Brigade Commander in 1915, when I was with the VIIth Corps. He may have been a good Infantry Brigadier, but he knew nothing about tanks. On one occasion I heard him say: "Little Anley is like a small china pot floating among a lot of big iron ones; little Anley is not going to get cracked." As a matter of fact, he did get cracked; but so far as we were concerned, the worst of it was, that during the process of avoiding a bump, our own cracks widened in place of being welded together.

In France, on October 9, G.H.Q. first took the matter of organisation in hand, and suggested to the War Office that the three and a half Companies, reinforced by the remaining half from Home, should be expanded into six Companies and formed into two Battalions, and that the two full Companies at Home should also be formed into two Battalions. Further, that the new Corps should be known as the "Tank Corps."

This miserable little programme of four Battalions was fortunately not agreed to by the War Office. On October 20 an answer was returned stating that the four Companies in France were to expand to twelve Companies and form

four Battalions, whilst five Battalions were to be raised at Home. The name "Tank Corps" was, however, not approved.

The immediate result I have already mentioned, namely, the formation of A, B, C and D Battalions at Bermicourt, which only completed their establishments on January 1, 1917. On January 30 authority was received to form C and D Battalions into the 1st Brigade and, on February 15, A and B were formed into the 2nd Brigade. Lastly, on April 27, in view of the expected arrival of two Battalions from the Heavy Branch Training Centre at Wool in Dorsetshire, approval was given to form the Headquarters of the 3rd Brigade. Here I will descend to a more human problem and give a brief description of the leaders of these three Brigades.

In order they were Lieutenant-Colonels C. D'A. B. S. Baker-Carr, A. Courage and J. Hardress-Lloyd, and three more different men could not have been found in a day's march. Baker-Carr started the war as a gentleman-chauffeur and has recounted his experiences in a delightful book *From Chauffeur to Brigadier*. He was a most cheery companion, the Murat of the Corps. Everyone liked him, and none more so than his men, from whom he had an inborn knack of extracting what was best. Courage was a cavalryman and quite different; he was amazingly hard-working and painstaking, and no detail escaped his eye. The last of the original Brigadiers was Hardress-Lloyd, also a cavalryman. He, I believe, started the war as a stow-away. This led to no one discovering what his substantive rank was, and by degrees a myth as to his origin was cultivated. He was a man of big ideas, and always kept a good table and a fine stable—in fact, a *beau sabreur*.

With such men life was a very happy one, our main anxieties revolving between obtaining efficient tanks and getting a decision on the pay of the N.C.O.s and men, a decision which was delayed and delayed and delayed: a question of a few wretched pounds, when the nation was

literally squandering several millions a day, and at home profiteers were gathering in as many more. This was the fault of some civil servant in the War Office, and in the circumstances he should have been hanged; for uncertainty of pay means uncertainty of *moral*.

As regards machines, their provision came under the authority of the Mechanical Warfare Supply Department of the Ministry of Munitions, the head of which was Lieutenant-Colonel A. Stern (later Sir Albert Stern). It was his initiative which had saved the tank in its earliest infancy. And when I first joined the Heavy Branch I found a first-class quarrel in progress between its Headquarters and himself. As I never take part in a quarrel unless I have originated it, I steered clear of this one. The real cause was that he was hard put to it to push forward production, whilst Headquarters, not understanding the difficulties which this work entailed, were constantly changing their requirements. At the time it struck me that all we could rightfully expect was a serviceable tank, and such details as whether a loop-hole was in the right place or not really did not matter a rap.

On December 31, 1916, Elles forwarded to G.H.Q. a detailed summary of his requirements, covering design, supply, transportation, organisation, war establishments and training. But little notice was taken of his appeal; for, on February 5, Sir Douglas Haig sent General R. H. K. Butler, his Deputy Chief of the General Staff, to a Conference held at the Ministry of Munitions, in order to represent his views on the "relative importance or order of urgency in which" he placed "the supply of engines as between tanks, tractors and aircraft." And the result was that tanks were listed third. At the time there may have been some excuse for this; but, as will be seen later on, Sir Douglas Haig was one of those slow-thinking, stubborn men who, when they have made up such minds as they have, are afraid of changing a decision for fear of unhinging them altogether. As I will show, though the

Germans gave us a lot of trouble, Sir Douglas Haig and his phenomenally unimaginative General Staff gave us infinitely more.

My own views on organisation cut right across both those which I found and those which had been proposed. I could not understand why it was necessary to use as a *pro forma* an existing unit organisation or simply to guess at what was wanted. In February I set about working out an organisation on what I was presumptuous enough to call "scientific lines." My opening remarks were as follows:

"The fighting value of a military organisation depends upon four main principles:

"(a) Power to fight.

"(b) Means of communication in order to co-ordinate fighting-power.

"(c) Means of supply to sustain fighting-power.

"(d) Reserves to replace casualties and so maintain fighting-power."

I pointed out that at present a Tank Battalion was only organised for (a) and that, consequently, we wanted (b), (c) and (d), and could get them by reducing Companies from four to three Sections, each of four tanks, with a fifth in reserve. I also allotted one tank to each Company Commander, suggested the conversion of four into signal tanks and eight into supply. Diagram 5 shows clearly what I proposed. This organisation was eventually adopted, but without official sanction.

Finally, as the indoor exercise was nearing its end, I produced what was known as "Training Note No. 16," a pamphlet on tank tactics; the first training manual of its kind, for what had thus far been issued were nothing more than a few platitudinous notes. This small manual was divided into nine parts as follows: I. Tank Organisation. II. Tank Operations. III. Tank Tactics. IV. Tank Co-operation with Other Arms. V. Preparations for

Offensive. VI. System of Supply. VII. System of Communication. VIII. Reinforcements. IX. Methods of Camouflaging. Appendices—Battle History Sheet; Loads and Stores; Disc and Light Codes; Lamp and Shutter Letter Code, and Station Calls.

As "Training Note No. 16," together with the solutions of the indoor exercise, formed for over a year the foundations of tank tactics, it may be of some interest to quote here a few extracts from it.

I defined the tank as "a mobile fortress," a kind of *Wagenburg* which could escort the infantry into the enemy's defences, and from behind which they could sally forth and clear up his trenches; because at this time there was no idea of using tanks independently. On account of its high protective power, it was pre-eminently an offensive weapon; further, the principle which governed its use was "surprise" and, consequently, it was essential that the preliminary artillery bombardment should be as short and as rapid as possible. I laid down that this bombardment should not exceed forty-eight hours, which in actual fact was just forty-eight hours too long, as we were to learn very soon. The theory of a tank-infantry attack I explained by means of a diagram (see Diagram 6). I wrote:

"Supposing that there are three main systems of defence: A-B, C-D and E-F, three echelons of tanks will be required and a mopping-up line for the enemy's first system. Each echelon, except the last, should consist of two lines, one for the attack on the main objective and one for the reduction of strong points which unexpectedly hold out. The first to operate against C-D, the second against E-F and the third with the cavalry to prevent the enemy consolidating on the line G-H, and so robbing the attackers of the fruits of their penetration. These three echelons are marked I, J and K and the moppers-up for the first-line system L.

"Besides these three echelons two wings are required,

the object of which is to work obliquely outwards, forming two offensive flanks to the infantry advance and broadening the base of operations by always threatening the enemy in flank. . . . In the diagram, they are marked P, Q, R and S, T, U."

The actual method of clearing each trench system is graphically shown in Diagram 7.

Under the heading "Preparations for the Offensive," no less than 121 separate actions are laid down. Most of these were decided upon during our indoor exercise.

The "Lamp or Shutter Letter Code" was an exceedingly simple one and, I think, is worth mentioning: "Figures by long numerals. E = Calling-up signal. RD = Read correct signal. T = Answering signal. D = Broken down. A = Fit for further action. Q = Require supplies. G = Require ammunition. M = Require minor repairs. U = Unfit for further action. R = Concentrating at rallying-point. C = Company. I = Infantry between — and — points. V = Tank or tanks. S = Section." Example: "Two tanks of Section number eleven of Company number twelve broken down, two fit for further action" would read: "2. V. S. 11. C. 12. D. 2. A."

Copies of "Training Note No. 16" were sent to Corps, Armies and G.H.Q. On March 15, "Tom" Hollond, then with the Headquarters XVIIIth Corps, wrote: "I have been reading your dossier on tanks, which is simply excellent"; but G.H.Q. at once ordered that all copies should forthwith be withdrawn from circulation, because it had been suggested to limit the preliminary bombardment to forty-eight hours. Though, as far as the Heavy Branch was concerned, we took no notice of this order, it prevented the circulation of this note to units outside the Corps, with the result that they remained ignorant of the tactics of the new arm.

As the tank was still a very imperfect machine, and

mechanical breakdowns were frequent, early in March I issued another paper entitled "Formation of Emergency Lewis Gun Units," the opening paragraph of which reads: "In order to guarantee that no fighting power in the Heavy Branch is lost, when, on account of casualties, frost, etc., the number of fighting tanks falls below establishment, a supplementary organisation will be instituted which will enable Battalions, at short notice, to be employed as Lewis-gun units." This was followed by an outline organisation and the methods of employing such units in attack and defence.

As far as possible nothing was left to chance, for our maxim was that foresight is the essence of efficient Staff work.

Whilst the potter's wheel was busily revolving, turning the clay of the brigand band into what was within three months to prove as efficient a fighting force as our Army possessed, preparations for battle were in full swing.

The next great tussle was to take place east of Arras, the original plan for this operation having been considered by G.H.Q. shortly before the opening of the battle of the Somme, and, on October 15, long before the close of that battle, preparations were set in hand. When still on the Third Army General Staff, I frequently discussed this projected operation with General Bols, Chief of Staff, and General A. Holland, Commanding the Artillery. The original idea was, that the Fourth and Fifth Armies should resume the offensive early in March, and that the Third was to strike eastwards between Beaurains and Arras, occupy Monchy-le-Preux and then advance south-east, denying to the Germans the Cojeul valley as a line of retreat, and if possible that of the River Sensée as well. Simultaneously the First Army was to operate north of the Scarpe and form a defensive flank to this attack.

As regards the Third Army operations, two novel proposals were made: the first was to pass one or two of the reserve Infantry Divisions underground in order to avoid

the German counter-barrage, and the second was to reduce the preliminary artillery bombardment to forty-eight hours' duration. The former was rendered possible by opening up the underground chalk workings (closely resembling the Chislehurst caves near London) which lay in a veritable maze beneath the city of Arras. Several times I visited them, and on the last occasion I found considerable stretches already lit by electric light, linked together by metre gauge lines and organised as barracks. The idea was to tunnel out from them well under the German front-line system, and then, on Z day, to blow openings at the far ends of the tunnels so as to allow the reserves to reach the surface.

The second idea was General Holland's. He did not believe in prolonged preliminary bombardments, not only because the wire they cut could often be replaced within twenty-four hours, but because the whole of the forward communications would be destroyed. General Allenby supported him in this contention,¹ but G.H.Q. objected to it. The upshot was that Holland was got rid of by being promoted to the command of a Corps and an amenable and subservient gunner, holding G.H.Q. views, was sent to replace him. Yet to me it still remains a mystery why General Allenby accepted his advice that a twenty-one days' bombardment² was necessary, which, in my opinion, ruined all prospects of success. Anyhow he did, and a longer bombardment even than that which had initiated the battle of the Somme was agreed upon.

As far as we in the Heavy Branch were concerned, our first tank project was written on January 21, and forward reconnaissance began immediately after; from then onwards I saw little of Hotblack except in the evenings.

¹ Extract from "Third Army Appreciation," February 7, 1917: "The artillery preparation for the assault will be of forty-eight hours' duration. During this period the fire will be continuous and of equal cadence. The object of this comparatively short bombardment is to obtain the advantage of surprise, and as the rate of fire is not to be increased previous to the assault, it is expected that the assault itself will be a surprise."

² Wire-cutting began on March 19 and the general bombardment at 6.30 a.m. on April 4.

Later on, about the middle of March, his work was supplemented by the Battalion and Company Reconnaissance Officers and nothing was left to chance, as it had been during the September tank operations.

Vital though all this work was, the main problem centred round the tanks themselves. In France we had only the old Somme machines, and they were in daily use in our driving school. We had at first been promised 240 new Mark IV machines, then this figure was cut and cut again, until 96 were to be delivered without fail during January and February. On this number we based our operations, yet it was not until towards the end of April, when the battle was nearly over, that we received the first of these. There can be little doubt that the low priority in tank engines fixed by G.H.Q. was hampering production. We were beginning to realise where our true enemy lurked. Anyhow, during the first week in March, there was not a single tank in France fit to go into action; consequently training in driving had to be suspended and a demand made on the Training Centre at Wool to send out every tank which could be spared. They nobly responded to this S.O.S., and sent us 26 Mark II training machines.

In the middle of this turmoil, in which I played but a small part, because the provision of tanks was a "Q" matter, the enemy suddenly changed his defensive plan. We all knew that he was excessively busy digging a formidable rear line. Then, one day, towards the end of February, he fell back to what was to become known as the Hindenburg line. The Gommecourt salient vanished and the whole German front rolled back between Arras to Craonne, rounding off the right angle formed during the battle of the Somme.

A day or two after this retirement became known, Elles and I motored to Arras, and from the suburb of Ronville we walked out to see where our front line was. We soon came under some weak gas-shelling, and on a road found two or three men lying at the foot of a tree stump. I asked them

who they were. They did not know. I had noticed a party of men well ahead of them, near Tilloy-lez-Mofflaines. I asked them who those men were; they were not certain, they thought they might be part of our front line. Then Elles said: "Come along, they know nothing"—which was only too apparent; so on we went. A few minutes later I said: "I am sure those men are not ours; they appear to be wiring." Elles, however, was certain that they must belong to our front line, so we moved on. Then I stopped again and pulled out my field glasses—Elles seldom carried his. Through them I saw for certain that they were Germans, and said so. It was fortunate that I was with him, as he might quite easily have walked straight into their arms. They were then not more than 700 paces away.

The general plan of battle had now to be changed. In my opinion it should have been abandoned altogether, for its *raison d'être* had vanished, but Sir Douglas Haig was not a man to abandon anything he had begun. He possessed a stereotyped mind, and, like a deluge or an avalanche, once set in motion, he could not stop, because, in my opinion, he considered this particular form of stupidity to be the one test of a good general.

The new plan, issued on March 12, was as follows: The operations, which eventually became known as the battle of Arras, were to open on April 9. The Third Army, consisting of five Corps and three Cavalry Divisions, was to pierce the German defences between the River Scarpe in the north and the village of Héninel in the south, and by marching on Cambrai to take the Hindenburg line in reverse. The Fifth Army was to protect the Third Army's right flank by operating east and west of Bullecourt, and the First Army was to form a defensive flank on the left of the Third by capturing Vimy. Success depended on penetrating not only the German front-line system, but also the Drocourt-Quéant line, which ran roughly parallel with this front and ten to twelve miles in rear of it. The crucial

fact laid down was that unless this penetration could be effected within forty-eight hours of the initial attack, the Germans would rush up reinforcements and hold it. Here was a clear case for a short bombardment, yet it was prolonged.

The whole of this new plan was based on the idea of getting the Cavalry Corps through, and the maps issued to illustrate its movements are instructive. At Z + 12 hrs. the cavalry are shown converging on Arras and blocking the whole of its western entrances. At Z + 18 hrs. Arras is seen smothered with horsemen. At Z + 24 hrs. two Cavalry Divisions are on the River Sensée and one still in and around Arras, and at Z + 36 hrs. all three are in front of the infantry and north of Quéant.

We all knew that this plan was fantastic in the extreme; however, it was not our business to criticise it. So we minded our own job, and by April 1 we had collected in all sixty reconditioned tanks, which could be employed in one of three ways. These were: (1) to concentrate the whole against either Monchy-le-Preux, with the object of penetrating the German front; or (2) to do the same against Bullecourt, the object here being to cut in and envelop the German left flank; or (3) to scatter them amongst the Corps for minor mopping-up operations.

The deciding factor was the ground. North of the Scarpe the soil was heavy loam, cut up by shell fire, wet and sodden, and obviously unsuited for tanks. South of that river it was of hard chalk, but the trenches here were large; farther south still, around Bullecourt, as there had been very little shelling, the going was excellent, but the trenches were larger still.

My own opinion was that, in spite of the Hindenburg line, the Bullecourt area offered the best chances of success, but only if the tanks were used two or three days *after* the initial attack, for I did not for a moment believe that the cavalry would get anywhere near Quéant. This suggestion was at once turned down, as we were told that the cavalry

were going to get through, *coûte qu'il coûte*. The next best plan was to concentrate the 60 tanks a little south of the Scarpe and move on Monchy-le-Preux; but outside the Heavy Branch no one knew anything about tanks; G.H.Q. was pulled this way and that by the Army Commanders, and eventually the following distribution was agreed to:

(i) Eight tanks to the First Army to operate against the Vimy Heights and the village of Thélus.

(ii) Forty tanks to the Third Army, eight to operate with the XVIIth Corps north of the Scarpe, and thirty-two with the VIth and VIIth Corps south of that river.

(iii) Twelve to operate with the Fifth Army.

It was an egregious plan; however, there was nothing to do but get on with it.

On March 6 advanced parties were sent forward. Tank railheads were established at Acq, Montenescourt and Achiet-le-Grand. The usual unexpected annoyances occurred. First 22,000 gallons of petrol were destroyed in a railway accident; most trains ran late, and some two days late, and the trucks in many cases were of the wrong type. Then the weather broke. Between April 2-6 snow fell in considerable quantities; this would make the tanks clearly visible as they moved forward. The 8th was, however, fine, and as we had put every tank on the field and so had no reserves in hand, after dinner that night Elles and I motored from Bermicourt to Arras to have a cheery word with such of the Tank Commanders as we might meet. Near Achicourt we found six tanks completely bogged; they had broken through a hard superficial crust of soil close to the Crinchon stream and were floundering in a morass of mud and water. This was indeed a bad beginning. However, in war these things are to be expected, so we moved on and crossed the tail end of an A.S.C. panic—some shells having exploded among a column of lorries. At 3.30 a.m. it began to rain (zero hour had been fixed for 5.30 a.m.). It must have

been about then that we reached Montenescourt, six miles west of Arras by road, and looked up Baker-Carr, who had established his Headquarters there. We found him in a small hut, sitting at a table, blaspheming down a field telephone which was emitting the most dreadful cracklings and buzzings. He was evidently worn out, and Elles, taking the receiver from him, ordered him to bed. We could get no word through it either one way or the other, but this did not much matter, because two hours before an attack nothing matters; for if the arrangements made prove defective, it is too late to change them. So we gave up our unequal contest with the telephone and returned to Bermicourt.

Soon after our arrival the first telegrams began to come in, and all were very encouraging, though few mentions were made of tanks. The first rush of battle was in every way a success, because the artillery tactics had been vastly improved since the days of the Somme. North of the Scarpe, the Canadians swept up the Vimy Ridge and held every yard they took. South of that river, though success was not quite so complete, it was nevertheless phenomenal: the two first objectives—the Black and Blue lines—were taken, and lodgments were made in the third—the Brown line—but the fourth, the Green, was untouched except by shell fire.

In these operations tanks played a subsidiary though at times a useful part. The eight with the First Army were ditched within a few minutes of moving east of the German front line, and four of the eight allotted to the XVIIth Corps, also operating north of the Scarpe, about Roclin-court, met with no better fortune. South of them, the four working forward from St. Nicolas did useful work, as well as several of those allotted to the VIth and VIIth Corps, and more especially those in the neighbourhood of Telegraph Hill.

The first rush of battle at an end, the inevitable pause occurred, and how to avoid it was in actual fact the un-

solvable problem of all the great infantry-artillery attacks; a problem which G.H.Q. never began to understand, and, not understanding, automatically based all these great battles on a misconception. This problem may be explained as follows:

Since the opening of the war, infantry had ceased to be the attacking arm. In consequence, the attack was carried out by the artillery, and only under cover of its assault by shell fire was it found possible for the infantry to leave their trenches without being annihilated. Whilst in them, they were protected by a wall of earth and when out by a wall of bursting shells. In the first case they were the occupiers of trenches, and in the second of open ground swept clear of the enemy by shell fire. They were still occupiers and in no sense attackers.

Now, to launch this shell assault demanded weeks and sometimes months of preparation. Roads were mended, railways built, dumps of ammunition formed and thousands of lorries used in this work. The foundations of the shell assault were, therefore, communications and supply, and the range of the assault was the range of the guns; that is to say, if the range of the guns was 10,000 yards, the assault could not be carried out beyond that range without moving the guns or a reserve of guns forward. But, and here is the crux of the problem, the initial bombardment not only destroyed the enemy's trenches and entanglements, but also all forward communications. Consequently it became exceedingly difficult to move the artillery forward, and impossible to supply it with anything like the ammunition it had fired during the initial attack. Further, directly the artillery barrage reached the limit of range, the occupying infantry had to go to ground; their first demand consequently was for engineer stores, their second for the evacuation of their wounded and their third for reinforcements. Therefore they also wanted roads, and the more they used them the less could the artillery use them, and the less the artillery used them the more fixed did the infantry become.

If on the top of this thousands of calvary were also trying to use the roads, and most of them, if not obliterated, were badly damaged by the bombardment, the pause developed into a deadlock. This is what occurred in this battle, as it had in the battle of the Somme, but G.H.Q. could not see it; hence the plan of occupying the Drocourt-Quéant line in forty-eight hours of zero was a fantastic one.

I had realised this before the battle was launched; consequently I had favoured all tanks being allotted to the Fifth Army, so that when the pause occurred on the Third Army front, as in the tactical circumstances it inevitably must, the Fifth Army could attack over ground which had not been destroyed by bombardment. On April 11 I saw this far more clearly, for it was then that an attack was delivered on that front, but too badly prepared to be effective.

On that day I motored over to Arras and had the greatest difficulty in getting there, as the road was blocked with cavalry. East of it, and in what was known as Battery Valley, I found a mass of dismounted horsemen. What they expected to do I cannot imagine; for the battle was already well over forty-eight hours old, and until Monchy-le-Preux and the defences north and south of it were ours, there was not a possibility of their advancing. Occasionally shrapnel would burst over them and a horse or two go down kicking.

From Battery Valley I walked towards Telegraph Hill to examine a peculiarly dug trench known as the Harp, which had caused our tanks some difficulty in crossing. There I found one tank standing out of a trench with its tail end resting on the bottom of it. On looking through the sponson door, I saw the driver sitting upright in his seat, but he was beheaded. A shell had entered his driving window, decapitated him and then had passed through the roof of the tank, apparently without exploding. He must have been killed whilst his tank was ditched, for otherwise the shell could not have passed out of the roof at

the angle it did. Outside the machine I found a fragment of his skull.

From Telegraph Hill I moved northwards along the Blue line to Bois des Bœufs, where I saw a good many of our dead, mostly in shell-holes. Then I struck eastwards to Beaurains, for at that village I had instructed the driver of my car to meet me. Beaurains is less than two miles from Arras, and it took me nearly two hours to reach it, and why? The road was completely blocked with cavalry. Arras itself was fairly clear, as it was under shell fire; nevertheless, the Hôtel de Commerce, where I pulled up for a drink, was doing good business. There was a dead soldier lying outside with a waterproof sheet over him; but inside, the place was crowded with soldiers drinking, chatting and joking. The women serving them were now practically shell-proof, anyhow as regards nerves. You cannot terrorise a people for long, especially if there is money to be made.

From Arras I returned to Heavy Branch Headquarters through an endless column of cavalry forage carts, mess carts and baggage wagons, and on arriving there found the following telegram from the Fifth Army, timed 3.10 p.m. "G.133. Situation as received up to 2.30 p.m. Anzac Corps was counter-attacked about noon from direction of Cagnicourt and driven out of Hendecourt, Hencourt and Hindenburg line east of Bullecourt, and is now back in its original line. 62nd Division also in its original line. 4th Cavalry Division is being withdrawn to Irls. . . ." Thus I learned that the Fifth Army attack had failed, and that, however long the fighting continued, strategically the battle of Arras was at an end.

Though the battle of Bullecourt, for as such did this attack become known, was a complete failure, from a tank point of view it was one of those turning-points which are decisive in the history of an arm. Its plan was hastily devised, shockingly prepared and carried out in an unco-ordinated way. As the artillery was weak, it was

decided that there should be no preliminary bombardment; instead, eleven tanks were to lead the infantry forward and penetrate the Hindenburg line east of Bullecourt. This plan was determined upon late on the night of the 10th, and, at 4.30 a.m. on the following day, it was still dark and snow was falling when the eleven tanks moved off to the attack. Though several were knocked out by artillery fire, the rest led the Australians through the enemy's wire and over the Hindenburg line. Then came the counter-attack, and two of the tanks fell into the enemy's hands and were found to be perforated by armour-piercing bullets.

This failure had two immediate results: the first was that a somewhat acrimonious quarrel arose between the Australians and the men of the Heavy Branch, which was unfortunate; and the second, that the Germans thought they had discovered an effective anti-tank weapon in the rifle A.P. bullet, and were thrown off their guard. But the less obvious results were more important; first, I was convinced that had we engaged the whole of our sixty tanks on the Fifth Army front, and had the attack been properly prepared, not only would a complete breakthrough have been effected, but that it would have been accomplished without destroying the forward communications. Before this attack my suggestions had been based on theory, now practice had borne them out, and though I realised that it would be extremely difficult to get G.H.Q. to grasp this, seeing that the battle had ended disastrously, I considered it not to be impossible.

On the whole, from the negative point of view the Arras operation, which in a desultory way dragged on into May, had proved that we were training and thinking on the right lines. One Commanding Officer in his report stated that the work of the tank crews had been "a triumph of *moral* over technical difficulties." More than this, it was a triumph of training over amateurish use. Breakdowns due purely to mechanical trouble were few,

and such ditchings as occurred were caused by the shelled ground and not through faulty driving. The tactics I had worked out were cast to the winds, the tanks being called upon to play the part of mine-sweepers rather than that of battleships. Nevertheless, the general result of our experiences was to confirm the principles outlined in "Training Note No. 16," and strengthen the reasoning by which they had been arrived at. In that note insistence had been laid on the employment of tanks in mass, in echelon and with strong reserves. Had it been possible so to use them, that is, had their numbers been at least four times as great, it is probable that a great victory would have been gained on the 9th. A battle which then could have been closed down and reopened somewhere else on the lines suggested by Townshend in his "MS. in Red Ink." For instance, between the River Scarpe and the River Cojeul there were three successive lines to be attacked. According to the principles laid down in the Training Note, there should have been three echelons of tanks with a mopping-up line for the enemy's first-line system. On the 9th the Germans were demoralised and the action of tanks had been decisive in every case where they had reached their objective. Waves of tanks succeeding one another in echelon with a strong reserve to draw on could hardly have failed to force a passage for the infantry, and so have compelled the Germans to fall back. The disorganisation of the Germans would have been accentuated and maintained. As it was, the thrust of the tanks was unsupported. It died away. Its endurance was strictly limited by its want of numbers and by the absence of a reserve. The enemy was able to reorganise, and the conclusion of the day's operations found him consolidating and strengthening his new positions.

These things we considered, examining every detail of the various tank actions with avidity. But what did G.H.Q. learn? With all truthfulness I can answer, "Nothing," otherwise the criminal blunders which were

to be committed a few months hence simply cannot be explained. We did not expect the Commander-in-Chief to have his eyes glued on tanks, yet it is little short of incomprehensible that he failed to detail a single officer of his Staff to watch these new and highly experimental and, above all, revolutionary machines; for being bullet-proof, they revolutionised tactics. Further still, though after this battle we submitted the fullest reports, they were, if read, at once pigeon-holed, otherwise it would have been impossible for G.H.Q. to have issued during May "S.S.164," an insignificant pamphlet of six pages entitled "Notes on the Use of Tanks and on the General Principles of their Employment as an Adjunct to the Infantry Attack." In it may be read: "It should seldom be necessary to employ tanks at the commencement of an offensive to assist the infantry assault . . . which [defences] can be adequately dealt with and destroyed by our own artillery bombardment," and "ground that has been very heavily shelled, or is very sodden to a considerable depth, is unfavourable to its employment"—which are mutually contradictory; because if tanks should only be used on the second objective and the first is heavily shelled, how are they to reach it?

Whilst G.H.Q. was writing this kind of balderdash, what were we doing? The Mark IV tank was now arriving in numbers, and we had to re-equip and to a large extent to retrain. Our establishment of schools grew at an amazing pace. We took over the village of Wailly, south of Arras, as a driving school; increased the size of the Central Mechanical School at Bermicourt; opened a Gunnery School at Merlimont on the coast some four miles to the north of Berck; an Anti-gas School at Erin; a Wireless Signalling School at Fleury and a Compass School at Erin. Besides this, the whole of the Headquarters Staff was thinking forwards. Already, in March, Martel had placed before me a longish paper he had written, entitled "A Tank Army," in which he visualised the employment

of a force of 1,864 machines. And a month later another paper, in which he discussed mortar and torpedo tanks to drive an enemy out of houses and villages—a most valuable suggestion and one which was later on experimented with. I also put forward a paper on the probable adoption of tanks by the Germans and the consequent necessity for us to consider anti-tank measures. The weapon I favoured was a heavy machine gun of about .5-inch calibre. I also pointed out that, all things considered, the best anti-tank weapon was the tank itself.

Our probationary period was now over, and, on May 1, Colonel Elles was gazetted Brigadier-General Commanding the Heavy Branch, and also during this month Major-General Sir John Capper took over the duties of Administrative Commander Heavy Branch from Brigadier-General Anley, and a Tank Committee under his chairmanship was formed to systematise and strengthen co-operation between the Army and the Ministry of Munitions.

CHAPTER V

THE GRAND LAMASERY

THE period which the Heavy Branch now entered was one of unceasing struggle against the present, and unending striving towards the future. Being so different from the older arms, for self-preservation it was forced into a revolutionary groove. Crude though its conceptions still were, its vision of the future endowed it not only with an abnormal virility, but also engendered within it the will to overcome opposition. Thus it happened that though, during the next six months, military orthodoxy, reduced to an unseeing, unfeeling bureaucracy, did its utmost to destroy all that it stood for, in the end the tank accomplished not only the resurrection of saner methods of war, but a transfiguration of warfare itself. How the seeds of this miracle were sown I will describe in the present and the following chapters.

Before the battle of Arras was launched, we were busily preparing for yet another attack, namely that of Messines; but before I outline the preparations made, I will turn to a problem which for ourselves, and, as the future was to disclose, for the Allied cause itself, was of vital importance: this problem was the expansion of the Heavy Branch.

We now had three Brigades of tanks, nine Battalions in all, and though we were about to be re-equipped with a more efficient machine, the Mark IV tank, and still more efficient machines were already on the drawing-board, we felt that with so microscopic a force our destiny could not be accomplished.

At what date the idea of expansion first arose, I do not exactly remember. It was mainly the General's and Uzielli's work to get out establishments. Anyhow, some

time in February or March the proposal was accepted that we should double our strength and aim at creating a Corps of eighteen Battalions. The result was that, on April 13, following on the good work done by tanks on the 9th, subject to priority in manufacture being given to R.F.C. requirements, the maintenance of the establishment of road mechanical transport and the provision of guns and ammunition, the Commander-in-Chief asked for this increase. His proposals involved the provision of about 900 officers and 8,500 other ranks over and above units already existing; that is, approximately a total of 18,462 officers and men. The whole, it was suggested, was to be formed into 2 Groups of 6 Brigades, of 18 Battalions, of 54 Companies, and would require 18 Battalion Workshops, 2 Repair Shops, 4 Salvage Companies, a Depot and 5 Depot Companies. This proposal was no sooner launched than it was vigorously obstructed, not by the Commander-in-Chief, but by one of the Departments of his General Staff.

The establishments were worked out by Uzielli and approved of by Elles. Uzielli knew exactly what we wanted and what was reasonable for us to ask for. Their final sanction was a question for the War Office, but before they were sent there they had to be scrutinised by G.H.Q., and it was here that they were delayed.

The department dealing with organisation was G.S. (O.b.), then and for long after under the control of Brigadier-General K. Wigram, who was universally known as "Kitten." As an individual no man could be more considerate or agreeable, but as a Staff Officer he was, in my opinion, too meticulous and conscientious to a degree. Often did I visit his office in Montreuil, invariably to find him standing by a high desk, sallow and tired out, as in deepest thought he extracted a cook here and a batman there from whatever establishment was before him. He seemed to be possessed by a horror of all the newer arms—trench mortars, machine guns, gas, tanks, etc. Half dead from overwork,

he would sigh: "How can I get through all this? . . . You must not ask for anything more. What of the poor infantry? Everything we can give to them must go to them." On one of my visits I remember saying to him: "General, you do not seem to realise that you are wasting not our time only but your own as well. We do not mind whether you strike out every cook and batman from our establishments. Surely you must know that, even if not one is authorised, we shall appoint as many as we require. All we ask of you is to get these establishments through."

This man, with all his charm, sincerity and self-sacrificing hard work, was one of the type who, through a profound sense of duty, coupled with a microscopic vision of the reality of things, spent hours every day blowing blue pencil-dust into the military machine, and in consequence nearly brought our part of it to a standstill. To get a new establishment through his office was like playing golf on a course with a hundred bunkers between each green. Every item was scrutinised, criticised and discussed, and then re-scrutinised, re-criticised and re-discussed *ad infinitum*, with the result that delays were never-ending. It was bureaucracy in a nightmare.

On June 5 another letter was addressed by Sir Douglas Haig to the War Office, in which he said: "That events had proved the utility of tanks, both as a means of overcoming hostile resistance, especially organised machine-gun defence, and as a means of reducing casualties in the attacking troops"—this was distinctly encouraging. Then on June 12, after some three months' wrangling, establishments for eighteen Battalions were put forward for approval. Next, ten weeks' delay occurred, for it was not until August 27 that approval was given. Meanwhile, on the 9th of that month, the War Office had informed Sir Douglas Haig that the men required by the Tank Corps, for Tank Corps the Heavy Branch had become on July 28, could only be provided at the expense of the infantry. Where-

upon, on the 20th, he replied, recommending, in view of the present shortage of infantry reinforcements:

(1) That all tanks then under manufacture and which could be completed by September 30 should be sent to France.

(2) That all transfers to the Tank Corps now under consideration should be postponed, including the transfer of the personnel of Corps Cavalry Regiments.

(3) That the manufacture of tanks should not be allowed to interfere in any way with the output of aeroplanes, guns and ammunition and the provision of mechanical transport, spare parts, petrol tractors and locomotives.

(4) That no personnel other than that now employed should be allotted for the manufacture of tanks.

Thus our establishments were still-born; worse—the whole Tank Corps was threatened by dissolution.

Here I may as well finish this sorry history. Nothing happened until October 6, when Elles put up a new set of establishments, the outstanding feature of which was a proposal long urged by Colonel Searle, namely the abolition of the Battalion Workshops and their replacement by five Advanced Workshops. On the 29th these new establishments were forwarded by G.H.Q. to the War Office, and, immediately following our first success at Cambrai, on November 27 they were approved. In all, it consequently took nearly ten months to get them authorised.

Whilst this ceaseless wrangle was in progress, three major battles were fought, namely Messines, Passchendaele and Cambrai, in which some 500,000 officers and men were killed, wounded and missing, a somewhat large figure when compared to the extra 9,400 officers and men we had asked for.

The first two of these battles I will examine in this and the next chapters. Their origin was of long standing, for quite early in the war Sir Douglas Haig had favoured an offensive in Flanders, the reason being, so I think, that farther south he might have to co-operate with the French.

And though I do not suggest that this was due to selfishness on his part, I do consider that it was due to the fact that he was temperamentally and instinctively anti-French to the core—there was not a French trait in his character.

As the Arras operations were closing down, he held an important Conference of Army Commanders at Noyelle Vion, in which he explained to them that the French military policy would probably be of a defensive nature with a tendency to avoid losses, and this in spite of the fact that the French War Minister and Prime Minister had assured him that offensive operations would continue. He considered that the French would wait for the Americans; that during May the Italians would attack on the Isonzo and Carso fronts, and that an early Russian offensive would take place. Bearing these points in mind, he intended to bring the Arras battle to an end and then, in all probability, shift the centre of gravity to the Second Army.

In actual fact there was no doubt about this move, for preparations had long been in hand on the Second Army front. Even as early as March 20, Colonel Courage, Commanding the 2nd Tank Brigade, had worked out a project for a tank operation in the Messines area, and, on the 23rd, this was dispatched by Elles to the Second Army. Forward reconnaissance work started on the 29th, and 2nd Tank Brigade Advanced Headquarters were opened near Lovie Château on May 14.

Whilst Courage was struggling with railway arrangements, a tankodrome at "Clapham Junction," 200 carrier pigeons, the 179th Tunnelling Company, camouflage nets and a hundred and one other things, a totally novel operation was suddenly thrust upon Heavy Branch Headquarters. It was known as the "Hush-Hush Operation" and emerged out of some previous shadowy idea of an attack on the Belgian coast. Now we were asked whether it would be possible for our tanks to storm the sea-wall between Ostend and Nieuport, and, once having sur-

mounted it, turn certain of our machines into power-stations which would haul up, off enormous pontoons, guns, lorries, etc., etc., required by the landing force. In my opinion the scheme was a crack-brained one, a kind of mechanical Gallipoli affair, and what astonished me most was, that when we modestly asked to be allowed to lead the infantry into action we were told that, as the tank was an adjunct, it had to follow and not precede the Queen of the battlefield. But here was a scheme worthy of Baron Munchausen. The pontoons, which I believe were actually built and at enormous cost, were 550 feet long and 32 feet wide. They were to be loaded with men, guns, wagons, ambulances, box-cars, motor-cars, hand-carts, bicycles, Stokes carts and side-cars, and were each to carry three tanks—two males and one female: they were, in fact, mechanical Noah's arks, which were to be pushed or hauled over the Channel by monitors. Once these pontoons grounded, the tanks were to walk along them and climb the sea-wall which had an incline of some thirty degrees, and lastly surmount a large projecting coping-stone which topped it. Then, clear of the wall, they were to haul everything up from them.

Here was a most fantastic proposal; yet there was never a mechanical problem which Searle and his engineers were unable to solve.

Near our workshops in Erin a full-sized replica of the sea-wall was built, and gadgets were made which would enable the Mark IV tank, at best not a handy machine, to perform a mechanical acrobatic feat unique in the history of war. My diary informs me that a demonstration of this conjuring trick took place on July 16, at which Sir Douglas Haig and Generals Kiggell, Rawlinson (who was to command this freak landing) and Capper were present. What amazed me was that after Kiggell had witnessed this astonishing "stunt," General Capper tackled him on the question of using tanks as surprise weapons, that is, without preliminary bombardments.

Kiggell disagreed, because, as he said, in order to beat the Germans we must first exhaust their reserves. In spite of this surprising demonstration he could not see that it was useless attempting to do what he suggested, if in the process we exhausted ourselves, unless he was reckoning that, as now the Americans were at war with Germany, human tonnage was the only factor which mattered. I am inclined to think that this was his fixed belief.

Though mechanically we solved this problem, I was opposed to it tactically, because I could not see how, in face of innumerable dikes which our tanks could not cross, and in face of machine-gun fire which our infantry could not face, as the tanks would be bunkered, we could ever have advanced inland. It may be interesting to mention here that, from an engineering point of view, every contingency except one was thought out. That one I discovered in 1933, when I happened to be in Ostend for a few hours. I had a look at the sea-wall, and half-way up I saw that it was covered with a fine green seaweed. This had never been mentioned. Would the tank tracks have gripped the stone and brickwork underneath? I doubt it; but fortunately we were never asked to try: for on account of our failure at Passchendaele the operation was cancelled.

To return to Courage and his gallant men. On the night of May 18, between the hours of 9.30 and 11.30 p.m., an important reconnaissance of the Steenbeek was carried out by Captain R. C. Knight, B. Battalion Reconnaissance Officer, Lieutenant A. E. Scrutton, the Reconnaissance Officer of No. 4 Company, and one N.C.O. and two Privates of 1st Battalion N.Z. Rifles. On the 16th and 17th there had been a considerable fall of rain, and though the 18th was sunny, there was no wind sufficient to dry the ground. This reconnaissance was important, not so much because the information gained was of assistance in the forthcoming battle, but because

from it and the bombardment which preceded the battle deductions could be made concerning future eventualities.

The Steenbeek, not to be confused with a stream bearing the same name which figured so markedly during the battle of Passchendaele and which was also called the Hannebeek, rose in the high ground about Wytschaete and flowed almost due south into La Douve, a tributary of the River Lys. Immediately west of the German front line west of Messines it formed as it were a moat, which would have to be crossed by any tanks assaulting that line. This reconnaissance party discovered that this stream resembled a wide ditch, with a muddy bottom and with pollard willows growing along its banks. The ground around it was found to be very lightly shelled and to be firm and dry. At the point where the Messines-Wulverghem road crosses the stream, the Anzac Corps had cleared a passage on the night of the 17th/18th, and the water was now flowing freely, and the ground north of this road, previously reported marshy, was rapidly drying up. The conclusion was that, provided a tank kept to its route through the pollarded trees, there should be no difficulty in crossing the Steenbeek.

Between the 18th and the attack, which was launched at dawn on June 7, except for a light shower on the evening before the battle, the weather was fine and dry; yet in Colonel Courage's preliminary report, dated June 13, he stated: "The ground over which the tanks were operating has since been carefully examined, and there is no doubt that it was exceedingly difficult from a tank point of view. The chief obstacle was marshy ground, and the fact that the bombardment had blocked many of the ditches, thus converting small streams into a series of small ponds."

This bombardment was opened on May 28; consequently it lasted ten days. It was a terrific cannonade which, on May 30, I witnessed from about Mont Rouge. To do so

I had to obtain a special pass, a kind of entrance ticket, which read:

SPECIAL PASS

No. 424.

Admit Lieut.-Colonel J. F. C. Fuller, D.S.O., to IX Corps Area on 30 May, 1917.

(Signature)—A. H. Gordon, Lieut.-General
Commanding IX Corps.

N.B.—No permission can be given to visit Scherpenberg and Kimmel Hill.

This is the only pass I have ever had to admit me to a battle.

From where I stood I could see the Grand Bois, Wytschaete Wood and the green fields along the valleys of the Steenbeek and Wytschaetebeek, and when I looked at them again on June 6 the green had faded into dun. Some shells as they exploded would throw up great fan-shaped masses of debris and smoke, others would burst in vortex rings, whilst others again shot up into the air feathers of fine brown dust. Day and night the bombardment continued, except for a pause now and again to mislead the enemy as to the hour the infantry would top their parapets.

This battle was strictly a limited operation, its object being to cut off the Wytschaete-Messines salient, which stood out like a bastion flanking the country north of it. It was well planned and carefully prepared by the Second Army, and was essentially an artillery-infantry battle, the eighty-eight tanks taking part in it playing an entirely subsidiary rôle. At zero hour nineteen mines were exploded under the German front line, and then, covered by a creeping barrage of shells, the leading infantry of the Xth and IXth Corps and the IIInd Anzac Corps advanced, supported respectively by 12, 28 and 32 tanks of A and B Battalions, each having 2 spare tanks in reserve and 6 supply tanks, which were converted Mark I and II machines.

From a tank point of view the main interests in this battle are, that the increased thickness of the armour of the Mark IV tanks proved an effective protection against the German armour-piercing bullets; that torpedo spars were first used to assist in unditching and were found unsatisfactory, and that supply tanks were for the first time employed.

On the morning of the 7th I found myself alone at Heavy Branch Headquarters. Elles was somewhere on the battlefield, and so were Hotblack and Martel. The last mentioned reported to me that: "The tank tracks showed that they [the tanks] had very nearly bellied at many points, and if the weather had been wet a far greater number would have stuck." He ended his brief report by saying: "If the crews want to paint names on their tanks, sensible ones should be insisted on. 'One-eyed Jonah' and 'Autogopaster' were two of the worst examples I saw, and give the Heavy Branch a bad tone." This was rectified, but unditching remained the problem.

At the conclusion of each battle or operation, it was my custom to collect all obtainable information, and after examining and codifying it to rectify my theories. This information I classified under two headings—general and particular—the first relating to grand and the second to minor tactical problems.

On June 10 I started on my grand tactical study, to which I gave the hideous title of "Projected Bases for the Tactical Employment of Tanks in 1918." I finished it on the following day, and will here give a summary of its contents, for though this paper was written mainly for my own instruction, subsequently it led to the instruction of others, and to little dreamed-of conclusions at the time.

I pointed out that, in view of the expansion of the Heavy Branch during the winter, no time should be lost in arriving at some general theory of tank employment; because the practical execution of this problem required: (1) time for the theory to percolate through the tactics of pre-tank

warfare, and time to assimilate itself with the tactics of the other arms; (2) a lengthy period of training between tank units and the other arms; and (3) a carefully selected and prepared theatre of operations suited to the practical execution of the theory.

Next I explained how entrenched fronts had arisen and that, because of their slight depth in comparison to their length, "Seldom in the history of war had there been a more favourable opportunity for carrying out a decisive attack . . . if only an infantry advance of a few thousand yards could be maintained." I then pointed out that, on account of the increasing depth of entrenchments, gun fire was no longer able to do this, and that the only weapon which could was the tank. Then, after having examined the tactics employed at Neuve Chapelle, the Dunajec, Loos, in Champagne, at Verdun and on the Somme, showing how the defence had steadily grown in strength, I passed on to my thesis and wrote:

"The main characteristic which differentiates the German defensive tactics of 1917 from those of 1916 would appear to be in the grouping of their men rather than in the grouping of their trenches.

"In 1916 the bulk of the German forces occupied the frontal defensive belt. . . . In 1916 the Germans sought security in the maintenance of an unbroken front, and, in 1917, by holding behind that front a large reserve which could strike at an opponent who broke it.

"This reversion to the 'big idea,' and the abandonment of the smaller one, namely that war is 'a series of local emergency measures,' has placed still further difficulties in the way of the attacker. Now it is no longer a question of breaking through a defensive line as it was in 1914, or a zone of defences as in 1915 and 1916, but of exhausting the enemy's reserves, some 800,000 men, before . . . undertaking either of these operations.

"We can do this either by hitting the enemy at a point which he dare not abandon, or at one at which he does not

expect to be attacked. If we do not select such points, he will fall back, as he did in March 1917, and dislocate our operations by temporarily denying to us the use of our guns.

“As hitherto, the change we have most carefully to foresee is the change the enemy is likely to carry out in his artillery tactics. . . . Having learned in 1916 and the first half of 1917 that if the attacker makes up his mind to do it, he can carry, by means of artillery and infantry alone, several lines of trenches in one bound, it stands to reason that the German General Staff will not jeopardise its artillery by so placing it that it can be pounded to pieces during our attack on these lines.

“If now the Germans withdraw their guns to a position from which, though they cannot cover their front-line system, they can cover their second and third lines and simultaneously are immune . . . from our counter-battery fire, by accepting the loss of a small belt of land, they can place our attacking infantry in such a position that, whilst it is feeling the full effect of the German artillery, it is receiving next to no protection from our own.

“The present construction of their defensive systems does not altogether lend itself to these tactics, the systems being too close together. But should distances be enlarged, the disadvantage to us becomes obvious, and there are signs that the Germans are fully aware of the advantage of this enlargement.

“Thus, presuming that the German grand strategy on the Western Front is Fabian in character, and it apparently has been so since the battle of Verdun, I will illustrate my contention in graphic form (Diagram 8).

“Suppose that A-B is the German front-line system, and that C-D, their second line, is so sited that the German guns at E can heavily shell the whole of C-D and yet on account of distance remain practically immune from our guns at F. Suppose also that the area ABCD is strongly wired and well sprinkled with machine guns, who is going to suffer most? The attackers from G-H, who will not only be perpetually worried by the machine guns and sharpshooters in ABCD, but who will come more and

more under the enemy's gun fire as they proceed towards C-D, or the enemy's machine gunners occupying ABCD and his infantry in dugouts along C-D? Undoubtedly the former, for they present the larger target and against them is being thrown the greater number of projectiles.

" Suppose now the attackers capture C-D; then at best they will be able to remain there as passive spectators of their own destruction, until such time as the guns at F move forward.

" To conclude these Fabian tactics, once the enemy's guns at E come under fire of those originally at F, they can retire under cover of a machine-gun barrage directed on C-D and on any positions between C-D and I-J that the attackers may be forced to take up. A complete destruction of roads, buildings, wells and trees in the area CDIJ will add to the discomfort of the attacker. Now, if a third- and fourth-line system exists, such as I-J and K-L, duplicating A-B and C-D, the progress of the attack is likely to be so costly and slow as to place the attackers, after several months of this type of warfare, at the mercy of the enemy's reserves.

" I will now analyse these difficulties and see whether the tank can assist us in overcoming them, and how far our existing tanks, and our present tank tactics, require modification in order to meet a condition of war which in the future seems probable.

" From the difficulty of penetrating a single line, we are now faced by a problem of an incomparably more complex nature, namely:

" (1) To draw in and exhaust the German reserves.

" (2) To capture the German front line and the area up to their third-line system, in face of incessant machine-gun fire.

" (3) To hold this third line for several days without much artillery support and under every type of shell the enemy can fire at us.

" (4) To see the enemy slip away from our grasp, directly the approach of our guns makes a further advance possible.

" (5) To move forward through a wilderness—roads

destroyed, wells blown in, houses demolished, in face of swarms of guerrilla machine gunners.

“(6) To begin the battle all over again.

“Outside exhausting the German reserves, which is a secondary issue, our main difficulty in this form of defensive warfare arises from the enemy’s machine guns, and not as heretofore from his artillery. Consequently, if by some means we can neutralise the enemy’s machine-gun fire, there is no insuperable difficulty in moving infantry forward, not merely under a rolling barrage produced by a line of stationary guns, but by two or more such barrages produced by two or more echelons of these weapons, or of tank 6-pounders and machine guns combined, one passing forward through the other as the other is firing. If, further, we can create mobile echelons of heavy and super-heavy guns and howitzers and keep these supplied irrespective of road destruction, the German delaying tactics will accelerate their own downfall.

“In order to solve this problem, the question we must answer is this: how are we going to maintain forward movement in face of bullets and shells? We cannot do so by means of unarmoured infantry and teams of horses; but we can do so by means of tanks and bullet-proof motor transporters. What we must decide upon now, and there is no time to be lost, are the types of tanks and transporters we shall require to meet the probable eventualities of 1918.

“To run through the difficulties *seriatim*, the requirements are:

“(1) In order to exhaust the enemy’s reserves, to select an area of attack from which the enemy cannot withdraw without acknowledging defeat, and of employing tanks in this area in order to economise infantry.

“(2) To move forward tanks and infantry under a protective barrage, the tanks replacing the artillery barrage immediately this barrage reaches its limit of range.

“Following this should come:

“(a) Echelons of Medium tanks.

“(b) Field guns in tank transporters.

“(c) Armoured cars, cavalry and tractor-drawn infantry.

“(3) To attack at once the enemy’s guns with Medium tanks and special parties of infantry directly the enemy’s defences in front of these guns have been captured.

“(4) Directly this attack has succeeded, to launch every Medium tank available, independent of guns and infantry, into the destroyed area in rear of the enemy’s gun positions, and clear this area of machine guns in order to enable our armoured cars, cavalry and tractor-drawn infantry to pursue.

“The above operation will demand a large number of tanks; in fact, there cannot be too many. First, there are those for the wearing-down operation; secondly, those for the decisive blow; thirdly, those for the capture of the enemy’s guns; and fourthly, those for pursuit. . . .

“The selection of a theatre of operations depends upon the objective to be gained. In turn the gaining of the objective depends upon the breaking down of the enemy’s resistance; consequently, the weapon which will most speedily overcome this resistance must be considered first, and the area of attack should as far as possible be chosen with reference to its powers.

“In the present instance we find that the chief resistance to our infantry advance comes from the enemy’s machine guns. We dare not concentrate all our artillery on these, because if we do we shall release his guns, which can, on account of their superior range, put up a stronger resistance than his machine guns. Further, whilst by sound and flash ranging and aeroplane observation we can discover his main gun positions, no means have yet been discovered to locate his machine guns other than advancing on them and risking casualties. Tanks, and more especially light tanks, must be employed to clear the way for the infantry advance. Consequently, if sufficient tanks are used to guarantee a decisive success, the tank must no longer be looked upon as a spare wheel to the car, in order to meet an unforeseen puncture in our operations, but as the motive force of the car itself, the infantry being no more than its armed occupants, without which the car is valueless.

“Our area of operations should, therefore, be :

“(1) Suitable for the rapid movement of tanks.

“(2) Unsuitable for anti-tank defences.

“Further, it should be chosen with reference to the tactical possibilities and characteristics of this weapon. Once chosen, all other weapons should be deployed in order to facilitate its advance, because it is the chief maintainer of infantry endurance, and it is the infantryman with his machine gun and bayonet who is going to decide the battle.

“The two grand-tactical acts of battle are envelopment and penetration. In a war such as the present one, the second becomes a prelude to the first. Artificial flanks are formed and are rolled outwards, or the communications leading to them are threatened. Nevertheless, in this war the non-existence of flanks is not the main difficulty, which is—the impossibility of secrecy on account of the immensity of preparations. If these preparatory measures can be reduced from weeks to days or hours, surprise can be gained or, at least, a sufficiency of time wherein to deliver a knock-out blow before the enemy can meet it. The mechanical endurance of the tank, its ability to move thirty miles in twenty-four hours, and its ability to carry its own ammunition enables this time to be gained and surprise to be effected.

“The power of the tank to penetrate the enemy's defences is too apparent to demand emphasis; nevertheless, it must be remembered that though penetration may enable our infantry to pass through the gap created, unless the enemy's reserves are drawn in, they will normally be in a position to strike at the advancing infantry. Should the enemy have 400,000 men behind his front, then if we kill and capture, say, 250,000 holding the sector attacked, and pass 300,000 through the gap created, the chances are that the general *écroulement* of those parts of his front on the flanks of the penetration will produce so complete a confusion that our army of pursuit will be able to continue its advance.

“Such a rupture as this would in all probability demand so great a number of tanks that in the time at our disposal there is little likelihood of our obtaining them. Assuming that we have no more than one thousand and five hundred

transporters, we can double or perhaps treble their fighting value, if to it we add the element of surprise.

“As an example of this I will take the recent Arras operations. The Germans are in the salient Lens—Arras—Quéant—Marcoing. A strong frontal attack, supported by 300 tanks, is made eastwards of Arras, which draws in the German reserves. Meanwhile 700 tanks and 500 infantry and artillery transporters are billeted on the line Amiens—Doullens—St. Pol, east of which reserves of infantry and artillery are billeted. Then, when once the frontal attack has succeeded in drawing in a large number of the reserves, the decisive attack should be launched, not from an elaborately prepared position under cover of a prolonged bombardment, but as a surprise attack of about forty-eight hours’ duration, the approach being made from points twenty to thirty miles distant from the section to be struck.

“Diagram No. 9 illustrates this manœuvre.

“A exhausts the enemy on the front BC and, having formed the pocket F, draws the enemy’s reserves along its circumference BEC, which places the flanks B and C in a tactically unsound position. G rapidly moves forward and, under cover of such local artillery preparations as can be made, strikes CD and passes through towards I, J and K. At the same time H, moving forward, forms a reserve to G. . . .”

Having thus elaborated my grand tactical theory, I turned to tank minor tactics and concluded my study as follows:

“The one thing to realise is, that mechanical warfare is going to supersede muscular warfare. That is to say, more and more is war going to depend on the engine than on man’s legs. In the administrative services this war has already largely replaced horse traction by motor traction. Except for the armoured car, the tank is the first application of this means of movement to the fighting units. The tank to-day carries forward the riflemen of the future. These riflemen, or machine gunners, must be supported

by tank artillery and by tank bayonet-men, so as to occupy and make good what the tank riflemen render possible. If this is sound reasoning, then we should forthwith prepare to raise the mechanical army we shall require, and to select a theatre of operations suited to its tactics. This area should force the enemy to offer one or two flanks at the conclusion of the wearing attack.

“Success in war depends upon mobility and mobility upon time. Mobility leads to mass, to surprise and to security. Other things being equal, the most mobile side must win: this is a truism in war as in horse-racing. The tank first of all is a time-saving machine, secondly a shield—it is, in fact, an armoured mechanical horse. If in a given time we can do three times as much as the enemy and lose a third less than he does, our possibilities of success are multiplied by nine. This is a calculation worth realising when we consider what we should do in 1918.”

This paper led me to see more clearly than I had ever seen before, that the decisive attack did not depend upon the locality of a tactical point or position; but that it lay in a strategical direction, namely in the rear of the enemy's army, and that consequently the decisive attack should be directed against the enemy's rear in order to strike at the *foundations* of fighting power. This led me to the conception of a novel form of attack, which consisted in assaulting the enemy's front, and simultaneously passing through this front tanks of a larger type than we had, a machine which would carry five machine-gun teams of four men each as well as its crew of seven men. Such machines would be able to penetrate the enemy's defensive system and form a chain of machine-gun posts in rear of it, which would cut off his front from his reserves. I calculated that, if these posts could hold out for some twenty-four hours, the enemy's front would become so demoralised that it would crack up under pressure of the frontal attack.

I placed this idea before Elles, and as he thought it was worth considering, the upshot was the design and produc-

tion of the Mark V One Star and Mark V Two Star tanks. As a matter of fact, they proved a failure; not that the idea was unsound, though obviously it was somewhat of a gamble, but because these machines were under-engined and badly ventilated. One marked advantage they did, however, possess: which was that they could cross very wide trenches.

On June 12, General Capper being then with us at Bermicourt, I gave him a copy of my paper to read, and he was so interested in it that he worked out a project of his own. This comprised the use of 4,000 tanks and a large number of infantry transporters. The next day I worked out with him a rough scheme for a tank campaign eastwards of the line St. Quentin-Cambrai, as the ground there was admirably suited for tanks. On the 14th he took his paper and mine to G.H.Q.

Nothing happened until July 14, when a Conference under General Kiggell was assembled at Montreuil; those attending were General Butler, General Capper, General Davidson, General Wigram and General Elles. The question under discussion was the employment of tanks in 1918, and, on his return, General Capper informed me that, with the exception of General Kiggell, everyone agreed that my scheme was worth considering; but as Kiggell did not, it was thrown out. Incidentally, Capper learned that his paper of June 14 had not been read, for it had been lost.

From these high projects I must now descend to those minor actualities which, at the time, were even more important. At Messines, as I have shown, we had kept our eyes firmly fixed on the ground. The battle of Arras had taught us to do so; because, whilst on the Somme most of the breakdowns had been due to mechanical imperfections, at Arras most were caused by the broken nature of the ground. Putting two and two together, we came to the conclusion that had the ground remained in the same condition it was first found to be in, the difficulty in crossing it, on the night of May 18, would have been considerably

less. Further, that the main disadvantage of intense preliminary bombardments was the destruction of the drainage system, which multiplied our difficulties three or four times, by causing the soil to become waterlogged. Besides this, the soft, mealy, aerated earth thrown up around the shell craters was found to be difficult enough for tanks to move over, as their tracks sank deep into it; consequently we concluded that were it soaked with rain it would become in most places impassable. These facts led us to turn anxiously towards our next battle, then in process of preparation, namely the projected attack eastwards of Ypres.

Not as yet having served in Flanders, I had no first-hand knowledge of that area; but Elles, Martel and others knew it well, as they had fought there during the first winter of the war. They knew, as did scores of thousands of others, that in many places, on account of the surface water, it was impossible to dig trenches, and that instead parapets had to be constructed; in fact, Colonel E. D. Swinton's original idea of the tank was largely based on the problem of surmounting a five-foot parapet. Even I, who had never seen the country around Ypres, had, in 1915, as I have mentioned, come to the conclusion that our ally had been "mud," and that it was Napoleon's fifth element which had saved us from annihilation in November 1914.

Above all men, Sir Douglas Haig should have realised this, as he had fought right through the 1914 and 1915 Flanders campaigns, and so should his General Staff. Yet this most vital of all questions, the defensive power of mud, seems never to have been discussed, or if discussed to have been dismissed as of quite minor importance when compared to man-power and gun-power, the pivotal factors in what may be called "The Haig Theory of War." For instance, when immediately after the battle of Messines a Conference of Army Commanders was held at Lillers, man-power was the vital question, and it was pointed out by the Brigadier-General Intelligence that of the 157 German Divisions on the Western Front, 105 had been

engaged since April 1. Thereupon the Commander-in-Chief explained that there would be no alteration in the general plan as defined at the Conference held at Doullens on May 7, namely that the French and ourselves would continue to wear down and exhaust the enemy by a process of continuous attack. Further, that the first step in this plan had already been taken on June 9, and that the next would be a battle to secure the Passchendaele–Staden–Clercken Ridge as a basis for a further advance into Belgium. This attack was to take place on July 25.

Then he pointed out that orders would at once be issued restricting the expenditure of ammunition in order to preserve the life of the guns; so that, when the bombardment opened, every gun would be in working order and a sufficiency of shells accumulated to pulverise the enemy's position.

On the next day Elles sent in his requirements to the Fifth Army. These covered a multitude of subjects, such as: tank areas, tank sidings, labour, transport, supplies, petrol, ammunition, etc. Meanwhile Hotblack, who had been reconnoitring the Fifth Army front, sent in his report, dated June 15. The main points in it were:

“The area cannot be considered good for the use of the present type of tank, as too much depends upon weather conditions.

“The main ridge and side spurs should be suitable for tank movement except in unusually wet weather.

“The area is cut up, however, by numerous valleys, which, though they contain little or no water normally in summer, are liable to be marshy in places and to become rapidly swampy after rain.

“Heavy shelling, in that it destroys the natural drainage of the country, tends to make all marshes more serious.

“There is no indication that the enemy realises that by damming streams he could create considerable tank obstacles. It must be remembered too that any such measures would be of great inconvenience to himself.”

A map accompanied this report, which made everything as clear as daylight. It was marked in four colours: brown, generally suitable for tanks; light green, valleys liable to become marshy; orange, German batteries; and dark green, woods impassable to tanks. The light green took the form of two open hands pointing towards each other, the fingers not quite touching. One hand was the Steenbeek system of streams running northwards, and the other the Reutelbeek system flowing southwards, and the space in between was the low ridge running from Zwarteleen, south of Zillebeke, to Polygon Wood. Almost at right angles to this ridge ran the Becelaere-Broedseinde-Passchendaele road along another low ridge, some six to seven thousand yards east of our front line.

Elles and I studied this map carefully, and came to the conclusion that, as the ground then was, tanks could in most places negotiate it. That if it rained, as it probably would, the streams would become serious obstacles, but that should the ground be heavily bombarded, as the drainage system would be destroyed, it would become impassable to tanks and to all wheeled transport. A report to this effect and the map illustrating Hotblack's report were then sent to G.H.Q.

Two days later, on the 17th, a Conference of Tank Brigade Commanders was held, at which the plan of the forthcoming battle was outlined. Nothing as yet had been settled as regards the part tanks were to play, and three alternatives were suggested:

(1) That, on Z day, the tanks, practically unsupported by infantry, should advance to the 4th Objective, the Red Line, their object being to disorganise the enemy and establish posts along it in order to cover the main infantry advance on Z + 1 day.

(2) To establish tank and infantry posts between the 3rd (Green Line) and 4th Objectives on Z day, followed by a combined tank and infantry attack on the Red Line on Z + 1 day.

(3) A general attack on the Green Line, then a pause of several days, followed by another general advance on the Red Line, covered by artillery fire.

Elles favoured the second alternative on account of it allowing for "close organised co-operation between fresh infantry and fresh tanks."

This Conference had been assembled because General Gough, G.O.C.-in-C. Fifth Army, had already expounded the principles which he proposed should govern the forthcoming operations. They read as follows:

"(1) It has been conclusively proved that, with the artillery at our disposal, a carefully organised and thoroughly prepared attack can break through any defences which the enemy devise, and

"(2) It has also been proved that, after the initial attack has succeeded, the enemy is temporarily in a state of demoralisation and confusion. His communications are disorganised, he may have lost a good many guns, his artillery is in doubt as to the position of the infantry, and the infantry are upset by want of artillery support."

This document proceeded to emphasise the initiative which was required from Platoon, Company and Battalion Commanders, and to point out that the period of disorganisation in the enemy's ranks was the period that should be exploited by the attack; that when disorganisation ceased, perseverance in isolated attacks merely resulted in heavy casualties, and that "the main difficulty was to discover the right moment to pass from one method to the other," from exploitation to preparation for another organised advance. The operations were, therefore, to be carried out on the well-recognised lines: (1) lengthy artillery preparation; (2) infantry attack on a large scale; (3) infantry exploitation; (4) preparation for further organised attack; (5) artillery preparation; (6) infantry attack on a large scale; and (7) infantry exploitation.

We were appalled by these views, for they were none other than a repetition of the Somme tactics on a floating

bog in place of upon chalky downland, and at a time of the year when rain was to be expected. Further, we had not forgotten the results of these tactics during the battle of the Ancre (autumn 1916), when Gough plunged his Corps into a morass of mud. Knowing that Gough was a bull-headed type of general and that our arguments would not convince him, we summoned the Conference of June 17 in order that our Brigadiers might infuse some sense into the heads of his Corps Commanders, and through them influence him.

On the 22nd each Brigade sent an advanced party to report to Martel, who some time before this had opened an Advanced Headquarters for the Heavy Branch at Poperinghe, and then, on account of the shelling, had moved it to a point abutting on the north side of the woods of Lovie Château, about two miles farther north. From here Brigade Commanders were instructed to get into touch with Corps: the 1st Tank Brigade with the XVIIIth, the 2nd Tank Brigade with the IIInd and the 3rd Tank Brigade with the XIXth.

Meanwhile, as, in spite of our ruse, we could make no headway against Gough's determination to sink his Army in a bottomless bog, we took up the question with G.H.Q., but with no greater success. We pointed out that the surface soil was of small depth, that below it lay a bed of clay, that much of the ground we were to attack over had at one time or another been reclaimed from the sea, and that, bearing these points in mind, a bombardment would convert it into a bog. That this was likely was proved by the fact that in peace time the farmers were heavily fined if they did not keep their dikes and culverts clear. We pleaded eloquently enough, but we might just as well have appealed to a brick wall.

Why was this, for the lives of scores of thousands of men hung on the issue whether the ground was firm or floating? To answer this question it is necessary to examine the mentality which governed G.H.Q.—the per-

sonality of Sir Douglas Haig and of the men who formed his General Staff.

Montreuil was a walled town, an old Vauban fortress, and G.H.Q., which occupied the barracks within it, were walled round by doctrinaire theories on war as out of date as this fortress itself, yet as immovable as its great earthworks, its bastions and its ravelins.

In the centre of this obsolescence stood Sir Douglas Haig. I cannot say that I knew him; I much doubt whether anyone really did. Before the outbreak of the war I had met him five or six times at Aldershot and on Army manœuvres. I remember him saying to me: "Splendid fellow," when, one evening on Brill Hill, I produced from my haversack an electric torch so that he might read a report. During the war I met him about as often, and the last time I ever saw him was in 1920, when, in somewhat ironical circumstances, he presented me with the gold medal of the Royal United Service Institution for having won the prize essay for 1919.

On these few occasions he appeared to me to be a great gentleman, and to-day, in spite of what has been said of him, I see no reason to change that opinion. I believe that he was a man of honour and integrity, and yet also I believe that he was a man so lacking in imagination that, in actual fact, he never saw the war; that is, as it really was. In place he saw the phantoms of past wars, and out of these spectral shadows emerged those mythological battles which to him were so real and, consequently, so necessary.

Being but slightly acquainted with him, it would be unjust to base my estimates of him solely on my own deductions. Instead I will leave it to one of his closest supporters and friends to do so, namely to Brigadier-General John Charteris, who has done so in three books: *Field-Marshal Earl Haig*; *At G.H.Q.* and *Haig*. This writer describes him as being studious, well read in military history, taking no interest outside military affairs and, consequently, being no student of politics. He says that he was almost inarticu-

late, was intolerant, never argued and seldom if ever made a joke. He considered himself "the predestined instrument of Providence for the achievement of victory for the British Armies." He compares him to Joffre, who, "like Haig," so he says, "was pre-eminently sane," by which I presume he means "unimaginative."

In his *Haig*, General Charteris gives a most illuminating picture of his daily life. He says:

"Punctually at 8.25 each morning his bedroom door opened and he walked into the garden, stopping, invariably, to tap a barometer that stood in the hall. A brief walk for a few minutes in the garden preceded breakfast, begun with exact punctuality at 8.30. At nine he was in the large room that served as his study; a great map on which each unit, both of his own army and the enemy, was marked, covered one wall; in the centre stood a large writing-table, on which, in the morning, there was hardly ever a paper, for each day's work was cleared off overnight; and in one corner there was a high desk at which he would write standing up. His first task was to receive the reports of the night. Then followed a series of interviews with the heads of the various branches of the Staff and with such subordinate Commanders as he might have summoned to his headquarters. At one o'clock came lunch, never lasting for more than half an hour. Immediately afterwards he left either by a car or on horseback to visit one or other of his units. If the visit was to a distant unit, he would have his charger and mounted escort meet him some distance from his headquarters, so that he could have the exercise he required. Almost invariably he would dismount a few miles from home and finish his journey on foot. Then followed a bath, a short spell of physical exercises, and then two hours' work at his desk. At eight o'clock he dined; by nine he was again at his desk, and worked until eleven. As eleven struck, he rang for his private secretary, to greet him with the almost invariable formula, 'Not in bed yet?' By 11.30 he was asleep."¹

¹ *Haig*, pp. 90-91 (Duckworth). See also *Field-Marshal Earl Haig*, pp. 205-207 (Cassell).

This is not so much the description of a man as of a machine, and of all professions that of a soldier should be the least mechanical, because war is so full of changes and unexpected happenings. If to be able to adapt thoughts and actions to circumstances as they arise is the greatest test of generalship, as I believe it to be, then Haig must fail by that test, for he adapted himself not to circumstances but to rules. When Charteris writes of Lord Charles Beresford, "His mind runs on rails, quite straight, and quite oblivious to everything outside their line," he is also describing Haig.

His theory of fighting was as simple as General U. S. Grant's, and he never once budged from it, whilst Grant did. From history he had learned that battles passed through the following phases:

" The manœuvre for position.

" The first clash of battle.

" The wearing-out fight of varying duration.

" And the eventual decisive blow, which would give victory." ¹

It had been so and, consequently, it must be so in all circumstances and irrespective of changes in armaments. As the decisive blow had in former wars been delivered by cavalry, cavalry remained the decisive arm; consequently, they figured in all his battles, irrespective of mud, fire, wire, etc. As this blow had to be preceded by the wearing-out fight, which hitherto had been carried out by infantry and artillery, this must continue; for of the newer arms Haig could grasp nothing, because of them history could tell him nothing. His creed was, that "firm hold be kept of first principles, and that a plan, when once it had been accepted must be adhered to and pursued with determination." ² This meant that, "Whatever the strategy, final

¹ *Field-Marshal Earl Haig*, p. 54

² *Haig*, p. 72.

victory could only come when, after the first clash of battle, the wearing-out fight, of whatsoever character it might be, had exhausted and reduced the enemy's power of resistance and his will to fight." ¹ So it happened that, on June 28, 1917, he is reported to have said: "that if the fighting was kept up at its present intensity for six months, Germany would be at the end of her available man-power." ² Though not an inhuman man, it would appear that to him men were nothing more than counters in a game of cards, in which points represented casualties and battles rubbers. A strange man, who would have done wonderfully well at Waterloo had his opponent been Blücher.

That Sir Douglas Haig was difficult to serve is beyond question, and this should be borne in mind when criticising his General Staff. First, it is not easy to convince a man who believes himself to be a divine instrument, and secondly, it is impossible to do so if that man is inarticulate and refuses to argue. That he was badly served is, I think, true; but the fault was his. Further, he selected his own Staff. Of his General Staff, those at times I came into contact with were Lieutenant-General Sir L. E. Kiggell (C.G.S.), Major-General R. H. Butler (D.C.G.S.), Brigadier-General J. Davidson (G.S., O.a.), Brigadier-General K. Wigram (G.S., O.b) and Brigadier-General J. Charteris (G.S., I).

Kiggell and Davidson I had known at the Staff College, the one as Commandant and the other as an instructor. Butler I knew little of, Wigram I have already mentioned and Charteris I met now and again. That all were honourable and single-minded men I do not doubt; but that it was a Staff of mediocrity I have no doubt whatsoever; therefore such criticism as I may level is made not against any of its members as private individuals, but solely as craftsmen, though I admit that under a man such as Haig a Staff of archangels would have cut very little ice.

¹ *Haig*, p. 37.

² *At G.H.Q.*, p. 233 (Cassell).

General Kiggell was a highly educated soldier, but a confirmed doctrinaire. He possessed knowledge, but little vision, and at the Staff College he appeared to me to be a dyspeptic, gloomy and doleful man. I cannot imagine that his influence on his Chief was in any way decisive or beneficial. Both were the slaves of doctrines and of history, and the war was not history but history in the making. At Camberley, Davidson was universally liked. We students looked upon him not so much as an instructor as a pleasant and agreeable companion. He lacked drive and decision and, I should say, also had little influence on the Commander-in-Chief.

Wigram I have already dealt with, but his work is unlikely to have brought him into anything like so close a contact with Haig as did that of Charteris, who was of the hail-fellow-well-met type; unctuous, and what in slang is described as a "flat-catcher"—not, of course, an intentional impostor, but a man whose wish was so often the father of his thought, that more often than not his flamboyant optimism imposed itself upon those who listened to him. Of his talents as an Intelligence Officer I know nothing; but I do know this: that if his effervescent calculations were received by his Chief with as much confidence and faith as they were met by disdain and derision in the front line, then Sir Douglas Haig must more frequently than not have been profoundly misled.

Whatever may be the value of these judgments, it is a fact worth remarking that, directly the war ended, this Staff vanished into oblivion. Nothing of the slightest importance has been heard of its members, and though this does not prove that they were nonentities, it does make one suspicious that their talents were somewhat circumscribed. Yet, in my opinion, the real weakness of G.H.Q. did not lie in the character of any of these individuals, but in the lamaistic system which prevailed at Montreuil. Haig worked there like a mechanical monk, for, as Charteris says, only on "rare occasions" was his routine "broken

even by a minute";¹ Kiggell meditated like a Buddhist Bhikku, turning over the prayer-wheel of his doctrines from which he concocted battles which in the circumstances could not be fought. The rest were seldom seen anywhere near the front; not that they feared to go there—that is absurd—but because the system prevented their going. There was little or no contact with reality—with the circumstances which surrounded the cutting edge of the Army. Hence time and again this edge was blunted, jagged and even broken. So it happened that, though the plans elaborated out of the rituals of the C.G.S. under the will of Sir Douglas Haig may have been sound enough for a certain set of circumstances, should these circumstances not be those which existed, two battles must be waged: the battle of theory as planned on paper, and the battle of actuality as fought on the ground. Passchendaele is the outstanding example of this grim duality which lamaism inevitably breeds in war.

¹ *Field-Marshal Earl Haig*, p. 207.

CHAPTER VI

THE FIFTH ELEMENT

THE two battles, of which the forward one all but destroyed the British Army and the rearward one is still in dispute among the pundits, began, in July, to take definite form. On the 5th of that month Sir Douglas Haig informed his five Army Commanders and Lieutenant-General Sir C. T. McM. Kavanagh, Commanding the Cavalry Corps, of his plans, which may be summarised as follows:

The Fifth Army, assisted on its right by the Second Army and co-operating on its left with the French and Belgians, was first to secure the Passchendaele Ridge, an operation which would entail hard fighting and might perhaps last for weeks. Then this Army and the French and Belgians were to advance north-eastwards and gain the line Thourout-Couckelaere. Simultaneously with this advance, the Fourth Army (the "Hush-Hush" operation), acting in combination with naval forces, was to attack the enemy about Nieuport and east of that town. From there that Army was to join hands with the Fifth, the two advancing towards Bruges. In the operations subsequent to the capture of the Passchendaele-Staden Ridge the Commander-in-Chief considered that opportunities were likely to arise for the employment of the cavalry "in masses."

At Heavy Branch Headquarters what perplexed us was, how anyone realising that the initial stage of the battle was likely to last for weeks could be so optimistic as to suppose that the spires of Bruges would ever be seen except from the air, or that the condition of the ground after such prolonged fighting would admit of even pack animals crossing it, let alone cavalry. However, judgment

was given and we could not alter the verdict. All we could do was to make the best of a bad job, so I got down to work.

On the 9th a Conference was held at Advanced Headquarters Heavy Branch, at which the forthcoming operations were discussed in detail, both tactical and administrative. One of the several important decisions made was to test out during the fighting nine wireless tanks. On the others I set to and worked out a series of instructions. On the 13th I issued to Brigades a long paper on the use of supply tanks and the organisation of refilling points. On the 15th another dealing with "Re-organisation on the Battlefield," to which was attached a chart showing how confusion might be minimised. On the 20th I issued three papers, one dealing with the "Recovery of Tanks damaged in Action," another on the use of the new unditching gear, which had been introduced since our experiences at Messines, and the third a list of twenty-three points which I wanted all units to watch during the battle so that we might be able to collect experiences and rectify our organisation and tactics accordingly. This day also Elles decided that each Battalion should be allotted twelve reserve tanks over and above its thirty-six fighting tanks, because by then we knew that the condition of the ground would be such that a large number of "ditchings" would occur.

Whilst these things were in progress, on the 7th counter-battery work began, and, on the 16th, the initial bombardment was opened. As ground was our supreme problem, Hotblack, determining to keep check on its destruction, arranged with the R.F.C. to have daily aeroplane photographs taken of the entire front over which tanks would eventually advance. From these, as the drainage system was more and more destroyed, he worked out the spread of the swamp areas. Then he transferred this information to a large-scale map, which we realistically called the "Swamp Map," and the Brigade Reconnaissance Officers

also transferred it to plasticine models (raised maps) of the eventual battlefield. A copy of each day's "Swamp Map" was sent to G.H.Q. until we were instructed to discontinue sending them. Yet, strange to say, this in no way prevented these maps growing bluer and bluer, for blue was the colour used to denote the boggy areas. The fingers of the Steenbeek grew thicker and thicker, as the water dammed up in the main streams percolated outwards over the flat shell-beaten ground, the craters rapidly growing into miniature ponds, which in time melted together into a necklace-like string of diminutive lakes, until the Steenbeek itself became a long oozing moat of mud stretching from the north of the Polygone de Zonnebeke, through St. Julien, northwards past Langemarck.

On the 17th I moved from Bermicourt to Advanced Headquarters, which, as I have mentioned, had been established just north of Lovie Château. It consisted of two or three huts and a number of bell tents. Why Martel had selected it I cannot imagine, for the ground was even then, after very little rain, so sodden that tents and huts had to be connected up by duck walks; further still, we were unpleasantly close to the château which was occupied by Fifth Army Headquarters, and which, as we soon discovered, offered an inviting target to German bombers.

As the ground upon which our camp stood was much the same as that to be found on the battlefield itself, two small incidents are worth mentioning. The first is that, on the evening of my arrival, I found two or three men digging a refuse pit not far from our mess hut. I said to them: "It is useless doing that, for you will strike surface water almost at once." But they persisted; they dug a square hole some two feet deep, and the next morning, when I passed by it, though we then had had no rain, three-quarters of it was full of water. Later, on the 18th, it rained heavily, whereupon our camp began to float. Then occurred the second incident. In my tent I found bubbles rising to the surface of a small puddle which had collected

near the pole. Suspecting that they were marsh gas, I placed a tumbler over them, and by means of a lighted match at once proved that my suspicions were correct, for the gas burnt with a blue flame, almost as blue as the maps G.H.Q. had rejected.

This day Elles arrived at Advanced Headquarters, and he brought with him the following instructions on the employment of tanks, which had been issued by the Fifth Army. They directed that in order to secure the closest co-operation with infantry, Tank Brigade Commanders were to act as tank advisers to the Corps with which they had been detailed to work; Tank Battalion Commanders as advisers to Divisions, Tank Company or Section Commanders as advisers to Brigades, which left individual Tank Commanders to work with Battalions. Who invented this ridiculous system I cannot imagine, for it destroyed all true co-operation by beheading the tank command. The Commanders were taken away from their commands, and as advisers lost most of their executive power. I expostulated, for a more effective system of disorganising us could not have been devised by our enemy. But my expostulations were ineffective, so advisers we all became.

Already, on the 12th, the attack had been put forward from the 25th to the 28th, which meant three extra days' bombardment. The ground was getting steadily worse, and, on the 19th, I entered in my diary: "The intense bombardment of the German lines begins. In other words, we are about to remove their trenches and wire, and put in their place thousands of shell-holes well suited to German M.G. tactics, as well as an impassable barrier of 'crumped' ground between our battle line and our supplies. When will our Chiefs learn the true value of artillery?—resistance breakers and not impediment makers." Again on the 20th: "The German lines are fast being obliterated. If we go on as we are, the enemy will simply evacuate his front line as described in my memo. of June 11, and we shall have to move up our guns and begin all over again."

Whilst our maps grew bluer and bluer, G.H.Q. saw redder and redder: what were they considering? Astonishing as it may seem, the employment of cavalry in this bog! On the 22nd, guiding principles for the Cavalry Corps were issued, and though the Cavalry Divisions were not to move forward before Z day, local cavalry action was to be considered up to the Passchendaele–Staden Ridge and Divisional Cavalry action beyond it. Preparations were, therefore, to be made to concentrate one Cavalry Division in the neighbourhood of Ypres, and two Cavalry Divisions were to be held in readiness to exploit success in the attack on the Passchendaele–Westroosebeke portion of the Ridge, and for this it would be necessary, when the time came, to locate a Cavalry Division about the Canal south of Boesinghe with its head east of the Canal in the neighbourhood of St. Julien.

I quote these instructions solely because they illustrate the blindness lamaism had created. On the 22nd, though as yet not much rain had fallen, the ground about St. Julien, where the Steenbeek as a stream was now unrecognisable, could only have safely been negotiated by wild duck, and even then these birds would have done better to take to their wings. To move cavalry over it was utterly impossible; our “Swamp Maps” showed that clearly, and so did every air photograph of this region. A few horsemen might still have stumbled up the Wieltje–St. Julien road, for some of it was left, though most of it was pocked with shell-holes into which water was already percolating.

To return to ourselves. The final distribution of fighting machines according to objectives and Corps was as follows:

<i>Objective.</i>	<i>IInd Corps.</i>	<i>XIXth Corps.</i>	<i>XVIIIth Corps.</i>
	Tanks.	Tanks.	Tanks.
Black Line	16	24	12
Green Line	24	24	12
East of Green Line	8	—	—
Corps Reserve	24	24	12

The move forward began on the 23rd, special causeways having been constructed over the Ypres-Comines Canal so that the tanks might cross it. Mustard gas, which had first been used by the enemy on the night of the 13th/14th, caused some casualties, but on the whole the approach was carried out at little cost.

Once again, on the 25th, the date of the attack was postponed, this time until the 31st, which, as I noted at the time, prolonged the intense bombardment to twelve days, and reckoning the bombardments which had preceded it, this meant that a total of twenty-four days' heavy gun fire would be delivered by the time the battle began. This, as I wrote, was sheer madness: "The Germans will retire to avoid our thrust—they need not fall back more than 3,000 yards."

On the following day the German fire died down, and I was of opinion that the enemy was falling back. Then, on the 27th, I heard that they had begun to withdraw on the front of the XIVth and XVIIIth Corps; but the next day I learned that this withdrawal was more apparent than real, for, except on the French front, their infantry were still holding their forward lines; but many of the guns had gone, which was proved by the few we captured on the 31st. This day, the 28th, we ceased to be the Heavy Branch and became known as the Tank Corps.

On the 29th the tank causeways over the canal were heavily barraged, which resulted in the 2nd Tank Brigade suffering a number of casualties. The next day all three Brigades were in position. That evening I dined with Hardress-Lloyd, and I shall not forget it, for in the middle of our meal we were heavily shelled, ten shells exploding some forty to fifty yards from the mess hut. The mess waiters went flat with whatever they were carrying; but Hardress chatted on in a most unconcerned way, though I must say that, personally, I did not feel over-comfortable. Then I motored back to our Advanced Headquarter camp and awaited zero hour, which had been fixed for 3.50 a.m.

I did not know it at the time, but official records now inform us, that between July 7 and 31, 4,283,550 shells were fired; that their cost was £22,211,389 and their approximate weight was 107,000 tons. It is difficult to picture what this expenditure really represented. Twenty-two million pounds was very nearly the yearly cost of our home army before the war; also it was, in 1917, equivalent to the direct cost of 4,400 tanks; but as during the war net losses in tanks never exceeded 25 per cent. for each engagement, indirectly it represented the cost of 17,600 of these machines. The 107,000 tons of shells fired represented in freightage 27 four-thousand-ton ship-loads, 540 four-hundred-ton train-loads (in England and France) and 35,666 three-ton lorry-loads. These figures alone make one gasp, but when it is remembered that the ground these shells were fired on was reclaimed fen land, such as is found in Cambridgeshire, they make one choke. How could such a battle succeed?

It could not and it did not, it was still-born through stupidity, and though the gallantry of our troops is beyond praise, the task set them was to accomplish the impossible—the paper plans of Montreuil.

I do not intend to describe in detail the part played by tanks in this struggle in the mud created by the surface water and accentuated by the heavy rain which fell on the 1st, 2nd, 3rd and 4th. It was in no sense of the word a tank battle, rather an anti-tank battle. In all, on July 31, the tanks assisted the infantry on fifty-one occasions. On the IIInd Corps' front the ground was atrocious and our machines were caught in defiles between the shattered woods and suffered heavy casualties. On the XIXth Corps' front they were more successful, especially on the assault of the Frezenberg Redoubt, and on the XVIIIth Corps' front most of the ground was impassable and the broken road to St. Julien formed a dangerous defile. At the end of the day the Black Line was more or less ours—that is to say, a penetration of some 2,000 yards only had been effected.

On August 2 I went forward to have a look at the battle-field. I motored to near Ypres, and crossing one of the tank causeways walked towards Pilckem and then to Hindenburg Farm to Mouse Trap Farm and back. The ground was shattered beyond recognition, everything was upheaved. The mud was unimaginably dreadful, in some places two feet and more of slush. On my way home I returned by the same causeway I had come by, to find it under 5·9 fire; luckily the shells were falling wide. But this was not to last for long, for a minute later, when I was on the high ground on the far side, a column of transport was caught on the causeway, men, horses and carts being blown to pieces. In spite of the loss and terror it was an enthralling spectacle. As the shells fell great fan-shaped showers of earth were thrown into the air far above the trees; yet there was no panic as that column slowly moved onwards through this inferno.

On my return I met Elles, and he said to me: "How are things?" To which I replied, "Look at me"; for I was plastered with mud from head to foot. I knew from what I had seen that tactically the battle was at an end, and the next morning I roughed out an outline of a tank attack on St. Quentin and talked the whole matter over with Elles, who agreed that, so far as we were concerned, the battle was dead. What arose out of this conversation I will relate in my next chapter, as it has no direct influence on the immediate operations.

Because an atmosphere of gloom had enveloped Advanced Headquarters, on the 4th I asked my chief clerk to make out for me a "text" which I could pin on the wall of my office, and point to whenever a visitor appeared to me to be unduly down-hearted. It read: "Don't be Pessimistic. This is the last 'Great Artillery Battle.'" Some time later Elles asked me to remove it, as it might give offence to the artillery pundits and shell-worshippers. I did so, but I regretted it, as I felt that I was right, and time proved that I was. Later on, in September, I remember

pinning up another notice to prove that the pundits were weakening in their faith. It was an extract from a XIXth Corps Artillery Operation Order, which read: "The intensity of the preliminary trench bombardment will for the future be materially reduced. To cover the whole country with a mass of shell-holes seems to be playing the enemy's game and merely tends to help him in his present tactics." I had written almost identical words in my diary on July 19; they were so obviously true that it seems strange that it required fifty-nine days of wasteful fighting to rub them in, but then the soldier is the most conservative creature on earth. It is really dangerous to give him an idea, because he will not adopt it until it is obsolete, and then will not abandon it until it has nearly destroyed him.

So the battle rolled on in mud and blood and fury, utterly different from the plan that had been evolved and which now daily was being amended. Though we could do no good, for on the 6th, I wrote, "The whole future is in the hands of God and his water-can," we of the Tank Corps Staff were constantly in front showing ourselves, and so helping to keep up the *moral* of our men. On the 8th, Elles, Hotblack and Green were very nearly shot. They were visiting the IInd Corps' front, and near Bellewaarde ran into a German sniper's post, and had to double back from shell-hole to shell-hole. On the 13th the first two, visiting the XIXth Corps' front, got a piece of shell through their car. That day it rained in a deluge, not that this could do any more harm to the ground, for most of it was by now impassable. In fact, I think, it did good, as it washed much of the soft spoil back into the shell-holes.

Whilst, on the 15th, 32,000 rounds of heavy shells were poured into Poelcappelle, and 37,000 into the tree stumps of Nonne Bosschen, I dined with Hollond, always a most refreshing event. "Don't worry about tanks," he said; "they will come along all in good time. Sir Douglas Haig will adopt them two years after they have become obsolete."

Two days later I learned that the 48th Division of the XVIIIth Corps intended to take a series of strong points—Hillock Farm, Triangle Farm, Mont du Hibou, the Cockcroft, Winnipeg Cemetery, Springfield and Vancouver—on the 19th, and that General R. Fanshawe, Commanding the 48th Division, calculated that this would cost him 600 casualties. It appeared to me that this was a wicked waste of men, and as he had asked for a Company of tanks to co-operate, I began to think out how the infantry tactics could be improved. To quote from my diary, I pictured the problem as follows: "The ground is shelled out of all recognition. . . . The infantry are not of the best; they start shaken and at once have to plough their way through a morass of mud. They normally attempt to do so in waves or lines of skirmishers; all formation is lost; men rapidly become exhausted; the more prudent remain in the shell-holes; the brave struggle on until they resemble a handful of peas thrown over the floor. Eventually they trickle back and report that they have been compelled to do so because the enemy has counter-attacked them. The Divisions and Corps, having to explain their lack of success, repeat the lie. Thus does the enemy gain a warlike reputation he in no way has earned." At once it occurred to me that the file system I had advocated in 1912 was the solution to this problem. On the 19th it was used, and the result was, that most of the objectives were taken, not at the cost of 600 men, but of fifteen killed and wounded!

This success was so startling, and it was due to co-operation and nothing else, that I set to and worked out in detail a memorandum on "Minor Tank and Infantry Operations against Strong Points," which was published on the 23rd. This tactical note is perhaps worth summarising, as it had considerable influence on the development of infantry tactics generally.

I laid down that the object of the tank is: (1) To force the enemy to seek shelter from its fire and so deny him the

use of his weapons; (2) to distract the enemy's attention from the infantry attack; and (3) to hold the enemy in his shelters until the infantry come up and capture him. And that the object of the infantry is: (1) To kill and capture the enemy; and (2) to hold the position once it has been captured. I then laid down the general procedure of the attack as follows:

“ The route the tank will take is firstly governed by the condition of the ground, and secondly by the nature of the objective. If a machine-gun emplacement, probably the tank will move right on to it in order to draw its fire ; if a concrete shelter, then in rear of it to cut off the line of retreat of its garrison.

“ The procedure of the infantry should be to start their attack almost simultaneously with that of the tank. This does not mean that they all move forward, but that they send out scouts in advance. Generally speaking, shelled ground is eminently suited for scouting and stalking.

“ This movement forward of the scouts is the first step in co-operation. They form a link between the tank and the infantry, giving confidence to the latter.

“ Directly the scouts are well out, the infantry should follow in sections (eight to ten men) in single or Indian files. Their object is to make use of ground for movement. Single files are the ideal formation for movement over broken ground. So long as all men in each file know their direction, it is simply a case of ‘ Follow my Leader.’ The most reliable man should be in rear to watch that no man falls out; he is the whipper-in, and his duty is to urge on the more prudent. Whoever is head of the file is automatically file leader.

“ Files should move at considerable extensions, fifty to seventy yards interval between files at the start. Between some of these intervals should be placed Lewis-gun teams whose duty it is to cover the file movements. Lewis guns should, when possible, work in pairs on the ‘ Relay System.’

“ The whole attack should move forward under Vickers-gun covering fire, which should smother the objective with

bullets, and under cover of a standing shrapnel barrage thrown beyond the objective, and a smoke barrage thrown on to the enemy's points of observation. If counter-battery work can take place, so much the better.

"The one thing the infantry *must avoid* is to move forward in lines or waves of skirmishers. The line is a rifle-fighting formation; what the infantry want to do is to move, consequently, they advance in file. If rifle fire is necessary *to aid movement*, the single files can form into line right or left, and directly the line is ordered to move forward by its leader, the Sections turn left and right and form into single files by wheeling in the desired direction. If this is done, Sections *will not get out of hand*.

"The attacking files should be followed by local reserves, also in single file, carrying picks and shovels and wire.

"Directly the objective is gained, a *prearranged party* takes charge of the prisoners, the rest *move forward*, throwing out their scouts as before, and take up positions from which they can open fire against any counter-attack. The attackers are fighters; they have nothing whatever to do with consolidation—this must be left to the local reserves, who dig and wire under cover of the original attackers."

The rest of this paper consisted of an example of such an attack worked out in detail and illustrated with diagrams. In a later edition I added a simple system of "Single File Drill" as well as part of my "Three Flag System."

As a matter of fact, there was nothing original in these tactics, for I had adopted and adapted them from Xenophon's *Cyropædia*. Anyhow, the Fifth Army, which detested tanks and seldom had a good word for them, accepted my tactics, and, on the 29th, on my way to Bermicourt, I looked in at G.H.Q. and found General Solly-Flood, now B.G.G.S. Training, studying a copy I had sent to General Butler. Eventually the single-file system was adopted and since has remained in *Infantry Training*. Why it was not introduced years before

the war is one of the minor mysteries of peace-time tactics.

The day after the raid on the strong points in the vicinity of St. Julien, General Capper, who had been staying with us, visited G.H.Q., and on his return he brought back the shattering news that, on account of the heavy casualties, the Tank Corps expansion had been postponed; in England it was calculated that by October reinforcements would be 100,000 short. Simultaneously with this news came a G.H.Q. letter summoning a Conference on the 21st, the object of which was to discuss the means of effecting economies in man-power in order to fill the infantry ranks. It was suggested that "A" men should be released from all departments, irrespective of whether they could be replaced or not, and that for the time being all work on roads, railways and hutting, etc., should cease. Though we knew the battle was going badly—in the circumstances it could not have gone otherwise—we had never imagined that the situation was so desperate. But after this Conference was held, and Elles attended it, we were appalled. It was pointed out that it was essential to keep the offensive going until November, so as to reach a decision before the end of the year. Every department was to be depleted of men and, consequently, every man remaining must be prepared to do more work and work for longer hours. The suggestions made, if not so tragic, verge on the ludicrous. The Director-General of Medical Services considered that it would be possible to get a certain number of men from the venereal class, though this might lead to a spread of infection. Then men were to be raked out of the Transport Service, the Forestry Department, the A.S.C., and even the number of denture cases on the lines of communication was discussed. There were always several thousands of these men in the hospitals, and it was suggested that all dental work should be suppressed during the winter. Eventually the D.C.G.S. pointed

out that it was essential that the men be obtained by September 1; that is, within eleven days' time!

Such generalship made my blood boil, and in my diary I let myself go. I wrote: "I would not say anything against this, if the C.-in-C. intended to break up the six useless Cavalry Divisions or turn them into machine gunners—even if this policy were a workable one. But no, rather disrupt every other branch—railways, tanks, A.S.C. and labour in order to save this sacred band. Tactically this policy is impossible: the French are doing next to nothing, the Germans have some 146 Divisions on this front and we 60 or 62. Tactically the battle is dead, though it may last on to November and cost us 400,000 men. *In order to save their skins the C.G.S. and C.-in-C. prefer this slaughter and the entire disruption of next year's offensive in order to gain headlines in the papers and so cover their defeat.* A man who has to fight in Flanders is unfortunate; but he who deliberately selects Flanders as a theatre of operations is a b—— f——. The folly of the above proposals is astonishing. What is man-power but fighting-power, and to collect lorry-drivers' mates and consider that because they are men they are fighting men is too childish for words."

To-day I feel that the sentence in italics is unjust; for now I no longer believe that the C.-in-C. and the C.G.S. were not acting honourably. Instead, that they considered that their doctrine of war was infallible; that the wearing battle must succeed if sufficient reinforcements were forthcoming, and that as ultimately this doctrine demands an onslaught of cavalymen, without cavalry the battle could not be won. The truth, I believe, was that long before the outbreak of the war their brains had become ossified, and that even the terrible circumstances of this battle could not penetrate the historic concrete in which they were encased. If this is not the true explanation, then Haig and Kiggell must have been two of the greatest knaves in the history of war—such I cannot believe.

From this tragedy I will turn to a comedy, and if war did not permit of both it would become unbearable. Since April the Americans had been in the war—on paper. On August 4 Elles had gone down to Bermicourt to interview some belonging to their Tank Corps, and, on the following day, I had written for their education a fairly comprehensive tactical paper. Now, on the 24th, two of them paid us a visit. They were a Colonel and a Major, and whether their journey from Paris had been too much for them I do not know, but no sooner were they seated in Elles's tent than the Colonel was sick and faded into unconsciousness. He was removed and dropped into a puddle, whereupon he revived and said: "You may take it from me, General, that the President intends to make this war a personal matter"—yet we trusted not quite so personal as he had succeeded in doing. Then they went to bed, for it was late when they arrived, and Uzielli overheard the following conversation in their tent:

"*The Major:* I guess that President de Castro [Venezuela] is the greatest man this earth has produced.

"*The Colonel:* Well, I reckon he is not so great as Julius Cæsar.

"*The Major:* Well, Julius Cæsar was murdered and De Castro has not been so.

"*The Colonel:* What about our friend Napoleon?

"*The Major:* Napoleon, well, he was lost at Waterloo. De Castro has never been beaten.

"*The Colonel:* Well, I guess he would not stand comparing with Jesus Christ.

"*The Major:* Well, at any rate that de Castro has never been crucified."

The next morning the Major showed me a paper he had written on tanks—it was marked "Very Secret" and "Shown to no one." Then he folded it up and put it into his pocket. Some weeks later it was found in an "estaminet" at Arras, and as it mentioned tanks it was sent on to

us. It was a remarkable effort. Having set forth what he called his "tactical concept," he wrote: "The operation works out this wise:

"(a) A cloud of fighting avions at high altitude, to clear the air.

"(b) A cloud of observation avions at low altitude, just in front of the line of tanks, dropping bombs and using machine guns on the trenches.

"(c) Our long-range artillery blocking the German artillery.

"(d) Our light artillery barraging the front to prevent escape of the Germans in their front lines.

"(e) Our mobile machine guns following up the tanks at about 500 yards, covering them with *canopy* fire, step by step.

"(f) Our DIVISIONAL JITNEY COMPANIES OF MACHINE GUNS driving in 'Hell-Bent' after the tanks and *widening the breach*.

"(g) Our cavalry riding through the breach as soon as it is opened for them, and swinging out *à la* Jeb Stuart around McClellan's Army. Sacrificed? Of course; but winning results worth the sacrifice.

"(h) Jitney- or truck-transported infantry following as fast as gasoline can carry it to support the success and make our foothold sure.

"(i) Truck-transported—or tank-transported—artillery following 'Hell for leather.'

"I BELIEVE SUCH A PLAN WILL WIN. FRITZ HAS NOT THE RESOURCES TO ADOPT SUCH A PLAN. WE HAVE. WE SHOULD DO IT AND DO IT NOW as fast as preparation goes in material. It will take time to get ready."

It will be seen that the Major was a veritable he-man. He ended by writing: "'Plunge' on the idea. It is no use to 'hedge' in the betting in this event." What a pity he was not at G.H.Q.

Thus the comedy ended and the tragedy went on: attack followed attack; a few yards of mud gained, a few yards

lost as the firing lines unrolled rabbit netting in front of them, in order to prevent the men sinking into the slush. A typical example was the attack on September 20: eighteen tanks of E Battalion and twelve of D went into action; of these one only reached its objective, nineteen were ditched, five received direct hits and five broke down. The ground was now so churned up that some of the tanks almost disappeared in the mud. Yet at this time G.H.Q. Conferences were being held at Second Army Headquarters to consider the employment of cavalry!

There is something almost pathetic in this appeal to the impossible. On September 28 the Commander-in-Chief issued the information that our repeated blows were rapidly using up the enemy's reserves and were demoralising him. Further, that the moment would shortly arrive when we could do more than gain limited objectives. We must, therefore, be prepared to exploit our successful attack in order to achieve decisive results. He considered that the attack projected for October 9 or 10 would probably give us opportunities for exploitation. Shortly I will describe what the conditions of this attack were.

Turning to the Second Army front, he was of opinion that there might be an opportunity for mounted action of cavalry in the direction of Moorslede and in a northerly direction to turn the eastern flank of the Staden Ridge. Should such an opportunity arise, the Second Army was to operate towards Moorslede while the cavalry would break up the German communications in the neighbourhood of Roulers.

As the mud grew more liquid, the cavalry idea grew more solid. On October 2 another Conference was assembled so that the Commander-in-Chief might ascertain what preparations had been made in order to exploit success. Again he pointed out that continued defeat, combined with the long duration of the war, had tended to lower the enemy's *moral*, and that the time was approaching when his men would no longer be able to stand our

repeated attacks, and when he would not have available fresh troops to throw into the battle. It was, therefore, essential that we should be ready to exploit success on or after October 10, and that all the necessary means for this purpose should be at hand. This must not involve overcrowding the forward areas, but necessitated the maintenance of fresh troops in suitable places whence they could be transported rapidly by bus, rail or on horseback to the battlefield. Then a most dramatic picture was painted: The reserve Brigades, the Corps cavalry and tanks, supported by masked and mobile Batteries, were to be ready to advance on the initiative of the local Commanders. A general offensive was to be launched on the heels of the retreating enemy to and beyond Passchendaele. Behind this attack were to come reserves of infantry and the Cavalry Corps, and when the favourable moment arose the enemy was to be pursued and annihilated.

When? Let us look at the problem rationally. There was no great difficulty in moving tens of thousands of men up to the Ypres Canal; but from there on to the Passchendaele Ridge lay a two-mile-broad moat of liquid mud which could only be crossed by corduroy roads and duck walks. At the time that Sir Douglas Haig, or his C.G.S., was painting this glowing picture, on an average it was taking twelve to fourteen hours to bring stretcher cases down from the front line to the canal, and in many cases six hours to carry forward by pack animal eight rounds of 18-pounder ammunition. Had the entire German Army fallen back to Bruges—that is to say, had all opposition ceased on our front—it would have been impossible for our troops to pursue, because it would have been impossible to feed them.

At about this time I remember motoring with Elles back to Bermicourt, and for miles we found the Hazebrouck road blocked with cavalry. At one place we pulled up for a few minutes to talk to some officers. We asked them: "What do you imagine you are going to do? Have you



“ CLAPHAM JUNCTION,” PASSCHENDAELE, SEPTEMBER 23RD, 1917.

any idea what conditions in front are like?" One answered: "We are told there is a ridge of sand we can operate on." I replied: "Well, there was some sand three weeks back, but since then it has been blown off the map." Here was a force of cavalry which would have found Salisbury Plain barely sufficient to deploy on, moving towards a non-existent bed of sand which six weeks before might have accommodated a couple of squadrons. As we moved on we thought that G.H.Q. must be stark raving mad.

As regards the attack on October 9, it was but one more fiasco. Here is a description, written by a tank engineer officer, of the St. Julien-Poelcappelle road at night-time:

"I left St. Julien in the dark, having been informed that our guns were not going to fire. I waded up the road, which was swimming in a foot or two of slush; frequently I would stumble into a shell-hole hidden by the mud. The road was a complete shambles and strewn with debris, broken vehicles, dead and dying horses and men. I must have passed hundreds of them as well as bits of men and animals littered everywhere. As I neared Poelcappelle our guns started to fire; at once the Germans replied, pouring shells on and around the road; the flashes of the bursting shells were all round me. I cannot describe what it felt like; the nearest approach of a picture I can give is that it was like standing in the centre of the flame of a gigantic primus stove. As I neared the derelict tanks, the scene became truly appalling; wounded men lay drowned in the mud, others were stumbling and falling through exhaustion, others crawled and rested themselves up against the dead to raise themselves a little above the slush. On reaching the tanks, I found them surrounded by dead and dying; men had crawled to them for what shelter they would afford. The nearest tank was a female. Her sponson doors were open; out of these protruded four pairs of legs. Exhausted and wounded men had sought refuge in this machine, and dead and dying lay in a jumbled heap inside."

Whilst such was the condition in front, the cavalry were massing behind.

For me, to all intents and purposes, the battle of Passchendaele was at an end. On September 1 I had started on a detailed winter training scheme. Ten days later I went on an official visit to England, returning on the 14th. At Bermicourt I stayed, as there was little or nothing for me to do at Advanced Headquarters. On the 18th Mr. Winston Churchill paid us a three-days' visit. Then General Capper came, then a Chinese General and his Staff. Visitors would come and go, all curious to see our misused machines. There was G. Bernard Shaw, who for two or three hours talked of himself; there was Horatio Bottomley, who appeared in a tin hat, looking like a Dutch cheese covered up with a soup plate. There were Japanese, Americans, Dutch, Swedes, Serbians, Russians, Italians, French, Belgians and one German, who was found in a tank sent out from England—an escaped prisoner stowaway. And there was Sir John Simon, who wanted to join our Staff; but this really was asking too much of our hospitality.

The visit of the Chinese General was by far the most entertaining. His trip to our workshops at Erin has been described by another as follows:

“ Certain of the coolies [we had about 1,000 Chinese in the workshops] had been trained to act as a tank crew, and these were accordingly told off to give an exhibition before the General, and climbed into their tank, preparatory to performing the usual evolutions. We duly took up our stations for the show, upon which there followed a most ominous pause, succeeded by the strangest sounds from within the tank. To us, ignorant of Chinese, it was as the chattering of apes, accompanied by the violent jerking of levers, the racing of the engine and the absence of any sign of movement on the part of the tank. Through the port-hole was visible the dark demon face of the driver, bathed in sweat and contorted with anxiety; the noises continued, increasing in fury and confusion as the immo-

bility of the tank became more apparent. At last expectancy was exhausted and we were forced to turn elsewhere. The crew, it appears, had entirely lost their nerve and their heads when face to face with the superior event of performing before the C.-in-C. of the Chinese Army, and had found themselves totally unable to operate the tank."

On October 12 my winter training scheme was finished, so I posted it to Tank Command, London, for printing in pamphlet form. It was entitled "Instructions for the Training of the Tank Corps in France," and it ran to forty-eight pages. Considering that twelve months earlier we had practically no training instructions whatever, the following contents list will give some idea of the progress made: "General Policy; Responsibility of Command; Categories of Training; Principles of Training; Organisation of Training; The Foundations of Training; Battalion Training; Individual Training; Collective Training; Schools; Gunnery School; Six-pounder School; Hotchkiss ·303 M.G. and Revolver School; Visual Training; Mechanical Maintenance and Driving School; Wireless Signalling School; Gas School; Compass School; Courses of Instruction; Senior Officers' Mechanism, Maintenance and Driving Course; Battalion Reconnaissance Officers' Course; Company Reconnaissance Officers' Course; Battle Practice Course; Driving Camps of Instruction; Gunnery Camps of Instruction; Attachments; Lectures; Reinforcement Dépôt; Rest Camps; General Arrangements, Messes; Individual Training Programme; Exercises in Section Training; Instructions—The Gunnery School; Examination Tests—School of Gunnery; Syllabus of Maintenance Course; Classification Tests, Mechanical and Driving School; N.C.O.s' School, England; Syllabus of Training for Tank Corps Personnel."

To return to operations. Though the battle struggled and straggled on to November 10, so far as we in the

Tank Corps were concerned it was over; another battle was about to loom forth and demand all our energy and attention. But before I examine it—and it was one of the most remarkable ever fought—I will sum up my views on the one which was now nearing its end. On November 15, I made out my report on Passchendaele, and though it may be thought unnecessary to include a summary of it here, I will do so, because this battle has not even yet passed out of the controversial stage. To-day it is easy enough to criticise the actions of those responsible for it; but the following remarks were written five days after the curtain was rung down on the last scene of this awful tragedy. I wrote:

“ Our failure has been due to the following causes, given in order of importance:

“ (1) The objective selected was impossible to gain, because the area was not practicable for offensive operations on a large scale.

“ (2) To the abuse and misuse of artillery.

“ (3) To faulty attack formations.

“ (4) To want of training on the part of the infantry.

“ (5) To lack of touch between G.H.Q. and the fighting troops.

“ (6) To the enemy's system of defence.

“ (7) To lack of command in the air.

“ (8) To bad weather.

“ The strategical objective was too distant without complete surprise, which was not possible on account of the lengthy preparations.

“ The tactical objective was an unsound one. As planned, the attack was made between two bastions—Polygonveld on the right and Houthoult Forest on the left—and it was planned to halt immediately beneath the Passchendaele ridge, which, like a curtain wall, connected them. It was an attack up a cul-de-sac—a second Balaclava. It was doomed to fail if Polygonveld held out. This bastion should have been taken before the main attack was launched.

“ The artillery tactics were suicidal, for shell fire destroyed the drainage system. In Flanders, as is well known, immediately under the hard surface of the soil there lies a swampy stratum. Once the surface is destroyed a bog is formed, and when rain is added, the streams and drains ceasing to function, entire areas are turned into swamps.

“ Not only did artillery fire, scattered broadcast over areas, remove one obstacle—wire—and replace it by a worse—mire—; but on the drier ground our guns created innumerable shell-holes which could be used as rifle pits by the enemy’s infantry, machine gunners and snipers.

“ The infantry attack formation was entirely one of waves of skirmishers, as used in trench-to-trench assaults. This formation was a bad one:

“ (1) Because there were few trenches to attack, and

“ (2) Because these lines lost all cohesion whilst crossing the shelled area.

“ The training carried out before the attack bore little relationship to the conditions of the attack itself. Trenches had been laid out and men had been practised over them. In the battle it was all shell-hole fighting and no trenches, and the result was that our men were surprised and bewildered, and when they had lost all cohesion they fell back, reporting that they had been counter-attacked.

“ From direct and indirect evidence it is apparent that G.H.Q. not only lost touch with the fighting troops, but with the conditions in which they had to fight. They were thinking in 1916 terms, and they gave the enemy no credit for improving his tactics, nor did they attempt to improve our own. Improvement only comes after disaster, and by the time it has percolated through existing obsolete ideas it is obsolete itself. Thinking ahead appears to be unknown.

“ For over three weeks G.H.Q had little or no knowledge of the condition of the ground. Early in September a senior G.S. Officer in the ‘ I ’ Branch discovered the effect of shelling on the drainage system, and a senior G.S. Officer of ‘ O ’ Branch stated openly, that he did not believe the conditions were as bad as they were painted,

because he had been told the contrary by some quite intelligent N.C.O.s who had come down from the front. Such is the liaison of G.H.Q.

“ The enemy’s system of defence is no longer what it was last year. Then he relied upon strongly held fortified areas; now he organises a general reserve behind his defences in order to strike at any force which may penetrate them. He withdrew his guns directly our counter-battery work was felt, and placed them so that they could pound our attackers as soon as they reached the limit of their protective barrage. He made extensive use of concrete works which cannot be knocked out by the heaviest shells; of specially trained counter-attacking troops and of long-range machine-gun fire. He trained his men for shell-hole warfare, not for trench warfare. Prisoners have again and again borne witness to these changes.

“ Command of the air was never gained in this battle. Fourteen days before the initial attack the enemy had complete control of the air. On July 31st his aeroplanes harried our men, they flew very low, sometimes under 200 feet. After that rest areas were almost nightly bombed. The failure at Polygon Wood was in part attributed to the excellent work of the German aeroplanes observing for their guns, which raked the right flank of the IIInd Corps attack.

“ The weather during August was very bad, but it was the shelling and not the rain which destroyed the ground. The combination of the two rendered entire areas impassable. At present, and so long as the swamps remain, the enemy position is virtually unattackable. Our men have repeatedly failed and are beginning to look upon the German as a super-soldier. Our Commanders have lost their nerve and have reverted to the nibbling tactics of last year; the result is loss in *moral*. If we are to win next year, fighting in this area must be called off and its lessons must be taken to heart.”

Having criticised the action of others, I ended my

report with a list of suggestions in order to render it constructive. I wrote:

“(1) A General Staff must be created at G.H.Q. which can not only think ahead and foresee, but which realises the importance of keeping in touch with the fighting troops. At present it is a case of the blind leading the seeing. It is not proposed that the C.G.S. should live in the trenches, but it is suggested that he should visit them and rub shoulders with the men. It would be a lamentable event were the C.G.S. to be killed; yet it will be a still more lamentable one if this war is lost.

“(2) The existing artillery tactics must cease. Accuracy must replace intensity of fire. Heavy guns must be restricted to counter-battery work using 106 fuses, and field guns to infantry protection.

“(3) Our infantry must be trained not solely to attack trenches, but also to use ground as cover. They should understand that there is an approach formation as well as an assault formation. The first consists in a series of files, the second in a series of lines. The first assists movement, the second fire. To attempt to carry out the approach as an assault is to turn tactics upside down.

“When active operations cease, every available fighting unit should be pulled out of the line and trained for next year's tactics, and not on this year's disasters. Humping railway irons and sandbags is not training; it is hard labour. If all Divisions cannot be so trained, then selected ones should be. It is understood that this is not in accordance with the views held by the C.G.S. Is he not thinking in six-divisional terms? Is he not still mentally living in the year 1914, when the whole British Army was a *corps d'élite*?

“One sound training manual should replace the hundred and one now issued and normally mislaid. This manual should be a war manual for the rank and file. For higher Commanders a new edition of *F.S.R.*¹ should be printed. The present edition is dated November 10, 1914. Have not events of sufficient importance taken

¹ *Field Service Regulations*, the collective training manual of the Army.

place since that date to justify a new edition? It is a certainty that a new edition will be published when the war is over—why not publish it now? Is *F.S.R.* intended to help soldiers win battles or to assist them in passing examinations?

“(4) The enemy’s system of defence should be carefully studied and its probable evolution thought out. We can gauge the lessons he has learned from this battle and then change our tactics to fit these probabilities. To expect him to do exactly what he has done is to grade him in the scale of life rather lower than the chimpanzee.

“(5) More aeroplanes and still more aeroplanes must be our watchwords for 1918. Willy-nilly the war is becoming more and more mechanical. We must have sufficient machines to gain complete command in the air, and then a surplus over for observation and counter-battery work. Aeroplanes must be used to attack guns; this will avoid much crumping of the ground.

“(6) We must begin our next offensive early, in order to make the most of the fine weather. It is no good waiting until August and then gambling with the Almighty. ‘*Gott mit uns*’ is all very well; but the Deity expects man to consult the almanac before He obliges him by tampering with the seasons.”

What happened to this report I do not remember, but if it ever got to G.H.Q. it probably went straight into the waste-paper basket, as our tanks in this infamous battle went into the slough of despond.

CHAPTER VII

AN EPOCH ENDS

WITH the approach of winter came yet another battle, which was to prove one of the strangest and the most remarkable ever fought; for though it ended in failure, it was destined to revolutionise the entire theory and practice of land warfare. This battle was the battle of Cambrai, the origins of which have never as yet been fully divulged.

It might be thought, and with some reason, that great battles originate with the Higher Command. They should, and under Generals such as Frederick and Napoleon they undoubtedly did. But as in this war almost invariably the powers of the Higher Command were delegated to subordinates, battles represented the repercussions of outside influences rather than expressions of the supreme will. Frankly, I believe that the one which, in due course, I shall describe, found its origins not, as is sometimes supposed, in Colonel E. D. Swinton's admirable Tactical Paper of February 1916, which I never saw until February 1918, but in my paper of June 11, coupled with General Capper's proposals arising from it. I have mentioned this paper in Chapter V, and it will be remembered that out of it emerged the suggestion to fight a tank battle between St. Quentin and Cambrai, and that this project was placed by Capper before G.H.Q. on June 14. Such was the seed, and now the question is, what caused it to germinate?

It will be remembered that, on my return from the Ypres battlefield on August 2, I informed General Elles that the battle was still-born. The next day I worked out the following brief project:

“*Project for the Capture of St. Quentin, by a Coup de Main.*”

“From a tank point of view the Third Battle of Ypres may be considered dead.

“To go on using tanks under the present conditions will not only lead to throwing good machines and better personnel away, but will lead to a loss of *moral* in the infantry and tank crews through constant failure.

“From an infantry point of view the Third Battle of Ypres may be considered as comatose. It can be continued at colossal losses and little gain. Anyhow, nothing much can be done for three weeks.

“In order to restore British prestige and strike a theatrical [spectacular] blow against Germany before the winter, I suggest that preparations be at once set on foot to take St. Quentin.

“The force required would probably be 2 Brigades of Tanks, 4 Infantry Divisions (2 French and 2 British) and 3 Cavalry Divisions to exploit success or to be used dismounted.

“The operation would be strategically a sound one (especially if operations in Cambrésis are contemplated next year) for the occupation of the line Morcourt–Terre Neuve–Marcy–Regay–River Oise would turn the defences of the St. Quentin–Cambrai Canal, and place the Germans in the salient Crèvecœur–Lesdins–Origny.

“Next year a wearing attack could be made between Crèvecœur and Lesdins and a tank flank attack between Lesdins and Mont d’Origny—the French and British Armies co-operating. The direction of both attacks would be Le Cateau, and when the line Le Cateau–Cambrai is reached, Valenciennes, the capture of which would probably force the Germans north of the Scarpe to fall back on the line Tournai–Mons. From Mons there is a good road to Waterloo.”

I placed this project before Elles, whose main criticism was that G.H.Q. would never agree to co-operate with the French. I then stepped up to a large map of our whole front which was pinned on the wall of my office, and having looked at it for a minute or so, I placed my finger on the

area immediately south of Cambrai and said: "Well, why not here?" He agreed that as it was in the British area it would be more suitable, and, on the 4th, I roughed out the outline of a project for an attack in that area, and handed it to him. That afternoon he took it to G.H.Q., and though General Davidson thought it worth considering, he was of opinion that General Kiggell would not favour it. Also that evening I dined with Hardress-Lloyd and discussed the Cambrai project with him. He was much taken with it and suggested that G.H.Q. should be urged to carry it out. I told him that it was useless the Tank Corps thinking of doing this; but that, should General Byng do it, it would stand a better chance. Hardress said he knew Byng well, and would see him the next day and would ask Elles to accompany him.

On the 5th Elles was at Bermicourt interviewing some Americans, so Hardress went with another officer, whom I do not know. In 1924, when staying for a night or two with Lord Byng in Ottawa, I asked him about this incident, and he told me that he put up his scheme to G.H.Q. on August 6. He asked me whether I was with Elles when he had visited him the day before to discuss the idea of a tank battle. He thought that it was Elles, but, in fact, it was Hardress-Lloyd and someone else. Lord Byng was under the impression that the second person was myself—but that was not so. He further told me that, on the 6th, he saw the Commander-in-Chief, and suggested a tank attack south of Cambrai for September 20. Next he said: "Sir Douglas Haig was much taken with the idea and was backed up by General Davidson. Then General Kiggell came in, and when he heard of the project he shook his head and said: 'The British Army cannot win a decisive battle by fighting in two places at once; we must concentrate every man in the Ypres area.'" This brought the conversation to an end.

At the time I knew nothing of this visit, only that Hardress-Lloyd had explained the project verbally to

Byng. Meanwhile I brought my paper of June 11 up to date, adding the project to it. This paper was finished on the 8th and a copy of it was then sent to G.H.Q. As Elles rightly, so I think, favoured raids to large-scale battles, my project was based on such operations. It was headed "Tank Raids," and it ran:

"In these operations the governing principle is surprise; consequently, the force to be employed must be exceedingly mobile. The duration of the raid must be short—eight to twelve hours; so that little or no concentration of the enemy may be effected for counter-attack. The whole operation may be summed up in—'Advance, Hit, Retire'; its object being to destroy the enemy's personnel and guns, to demoralise and disorganise him and not to capture ground or to hold trenches. Big raids of this description will not only reduce the enemy's fighting power, but will also reduce his initiative with reference to any big battle which at the time may be in progress. It will interrupt his *roulement* of reserves and make him think twice as to placing exhausted and demoralised Divisions in those parts of his line which are not included in his battle front. Further, it will confuse him as to the decisive point of attack; for any day one of those raids may be followed by an infantry offensive.

"For a raid on a front of 8,000 yards the following force is suggested:

"(1) Three Brigades of tanks of two Battalions each, i.e. 216 tanks.

"(2) One or two Divisions of infantry or cavalry, with artillery.

"(3) Two Squadrons of aeroplanes.

"(4) One or more Brigades of field guns.

"(5) Forty gun carriers, carrying twenty 60-pounders and twenty six-inch howitzers.

"(6) One Field Company R.E.

"(7) Four Companies of machine guns.

"The battle formation might be as follows:

"(1) Tanks in three lines. The first line to go straight forward on to the enemy's guns. The second line to cut and crush down the wire and to work up and down the

enemy's trench system. The third to make for special tactical points—flanking positions, points of observation, villages and to aid in mopping-up work.

“(2) The cavalry to fight on foot as infantry, and to be split up into ‘trench-cleaning’ parties to work with the second line of tanks.

“(3) The aeroplanes to fly low, attack the enemy's infantry and gunners and to bomb villages, bridges, roads, etc.

“(4) The Brigades of field guns to supplement the guns supporting the attack by smoke barrages.

“(5) The forty heavy guns and howitzers to supplement the heavy artillery on the spot, and counter-batter the enemy's guns and bombard his approaches.

“(6) The Field Company to provide gun-destroying groups to be carried forward in the first-line tanks, and wire-cutting and dugout bombing groups in the second and third lines.

“(7) The Machine-gun Companies to put up barrages on the flanks of the attack, and to work with special tanks told off for flank protection.”

These preliminary remarks made, I suggested the following area:

“A raid into the re-entrant formed by the L'Escaut—St. Quentin Canal between Ribecourt, Crèvecœur and Banteux. [Diagram 10.]

“From the map the ground would appear to be suitable for tanks; further, the area to be raided contains several fair-sized villages and important ground and is well limited by the two canals, which not only make rapid reinforcing of the area between them difficult, but completely limit the tank objectives.

“The distances between various places in this area are shown on the diagram.

“Supposing our line to run along AB, the raiding force should be distributed in three groups:

“(1) To scour the country between Marcoing—Masières—Crèvecœur—Le Bosquet—Banteux.

“(2) To form an offensive flank between Le Bosquet and Ribecourt.

“(3) To form an offensive flank against Banteux.

“The attack should be launched preferably at dawn, the first line¹ of tanks making straight for the enemy’s guns, which before and as they approach them should be bombed by our aeroplanes. The second and third lines should follow whilst our heavy guns begin counter-battery work and the shelling of the villages and bridges along the canal.

“The essence of the entire operation is surprise and rapidity of movement. Three hours after zero the retirement might well begin, the tanks and aeroplanes acting as a rearguard to the dismounted cavalry retiring with their prisoners. Guns captured might be dragged in behind the tanks.

“The spirit of such an enterprise is audacity, which should take the place of undisguised preparation. Mosby’s and Stuart’s tactics and dash are the more suitable; we must abandon the obvious and rely on surprise and the unexpected.

“At Lagnicourt in April last the Germans surprised us and attacked with some 3,000 men, capturing forty-seven guns, though these eventually had to be abandoned. But suppose that in this attack the Germans had employed 200 tanks, the likelihood is that this thrust would have succeeded and would seriously have affected our operations east of Arras.

“At the present moment what defence could we put up against a surprise German tank attack carried out on good ground against some unlikely portion of our line? Practically none; in fact, no more than we were able to do against the German gas attack at Ypres.

“From now on, until March next year, there is no reason why five or six tank raids on a large scale should not be carried out on similar lines to the ‘Travelling Circus’ of guns so successfully employed during the winter of 1916–1917 by the Third Army.

“Finally, choice of ground, surprise and audacity are the three secrets of success. The three deadliest sins being—publicity, pusillanimity and pulverisation.”

¹ The general organisation was described in a previous section of this paper.

From this it will be seen that my aim had nothing to do with fighting a decisive battle, for the area was not suited to such an operation. Whilst in a raid it is an advantage to work within topographically restricted flanks, in a decisive attack the one thing that a tank force demands is open ground, especially on the flanks, so that the enemy's trench systems may be rolled up by moving outwards. This had nothing whatever to do with the St. Quentin project I had discussed with General Capper, which was a decisive operation. What I felt was, that if we carried out five or six such raids, we should so demoralise and bewilder our enemy that one day we might suddenly replace a raid by a decisive battle.

Once this scheme was finished, much doubting that G.H.Q. would even deign to read it, I sent copies to General Sir William Furse (then M.G.O. War Office), to Lieutenant-Colonel Stern, to "Tom" Hollond and to Mr. Winston Churchill, so that the seed might fall upon fertile as well as barren ground. The upshot of this was that, on August 22nd, Sir Eustace H. W. Tennyson D'Eyncourt, who had been connected with tank design from its earliest days, wrote to Sir Douglas Haig pointing out, with reference to the conditions then existing round Ypres, that every machine has recognised limitations, and in consequence should not be "called upon to surmount continually increasing difficulties." Then he said:

"It appears to me, therefore, wrong in principle to attempt to fit the tanks with all sorts of arrangements for unditching, etc.; and that attention should rather be turned to selecting more suitable ground, which they could comparatively easily negotiate, and for which they were designed. . . . Of course, I am not aware of all the military conditions, but I cannot help thinking that, if it were possible to utilise them in large numbers on suitable ground, preferably rather hilly country, where the wet drains off, I believe a tank attack on a big scale could be made with prospects of success; possibly without much

artillery preparation, and with comparatively few infantry."

To this suggestion Sir Douglas Haig replied on August 27:

"It would, of course, be far preferable if the tanks could be employed on suitable ground such as you describe. As I am sure that you fully realise, however, the choice of front on which to make an attack must be made with regard to many considerations, tactical, strategical, political and so forth. In making this choice, the tank—at any rate in its present state of development—can only be regarded as a minor factor. It is still in its infancy as regards design. It is of uncertain reliability. Its true powers are still more or less a matter of conjecture. The troops are not yet fully accustomed to it, nor do they place sufficient faith in what it can accomplish to be willing to accept it in lieu of artillery preparation and support. As time goes on, and the designs improve, the tank will very probably become a more important factor in the choice of the battlefield, but under present conditions it must be, as I have said, a minor factor.

"In its present state of development the tank is an adjunct to infantry and guns, although undoubtedly a valuable one under conditions favourable for its use. The question which I have to decide, as matters stand, is whether to use or not to use the tanks under conditions which are unavoidably unfavourable. I have decided that, on the whole, it is advisable to make use of them even under such conditions, and on many occasions they have done valuable service, more than sufficient to justify this decision."

The importance of this reply lies in the fact that it was written only three months before one of the most novel, remarkable, successful and economical initial attacks ever made, the results of which, as General Charteris says, "exceeded expectation,"¹ and a battle in which tanks were not "minor factors" or "adjuncts," but the superior

¹ *Field-Marshal Lord Haig*, p. 28a.

weapon, and in which the infantry gained an unshakable faith after no more than a few hours' co-operative training. Why then, it may be asked, had Sir Douglas Haig three weeks before favoured General Byng's suggestion for a tank battle? The truth, so it seems to me, is that, whilst past knowledge of war obsessed him, actual events had but an ephemeral influence over him. On August 6 he favoured tanks, because the first battle reports from Ypres were encouraging; then, when he received General Gough's misleading report of August 14, his opinion on tanks swayed in the opposite direction. In this report he read: "That there is in certain quarters a tendency to overrate their powers. . . . At present they are not sufficiently perfect mechanically to be more than an adjunct of the infantry. They are slow, vulnerable and very susceptible to bad 'going.' The 'going' on a battlefield will always be bad . . . it would appear that the moral effect of their appearance is diminishing rapidly. . . . Large forces are out of place unless very great mechanical improvements can be effected. . . ." This report, I believe, perverted his opinions and drove any idea of a tank battle out of his head.

As nothing further was heard concerning my raid project, on August 27, the day the Commander-in-Chief replied to Sir Eustace Tennyson D'Eyncourt, I was led back somewhat unexpectedly to the St. Quentin one. I happened to lunch with General F. Lyon, now B.G.G.S. of the XIXth Corps, who was pleased with what the tanks had done, and who considered that they were being wasted in the swamps. He asked me whether we had ever considered having "an independent show" of our own. I told him that we had. He then, curiously enough, suggested the capture of St. Quentin. The next day I once again talked to Elles about this and, on the 29th, he went over to Fifth Army Headquarters, at which General Byng was on a visit, to see him about it. On the 30th he told me that he was more "hopeful over the St. Quentin show;

but it is not likely to be at St. Quentin—somewhere near it.” And on September 2, having visited the Third Army, on his return he told me that the St. Quentin operation was definitely off, “all troops being required for Ypres.”

In spite of this apparent full-stop, on September 5 General Byng revived the idea with G.H.Q., and on the 7th Elles wrote to G.H.Q. asking for authority to withdraw five Battalions of tanks. Thus:

“As regards employment of tanks on fronts other than those of the Fifth and Second Armies, there are possibilities on both the First and Third Army fronts.

“As regards First Army front, I am in communication with First Army on the subject and will report in due course.

“As regards Third Army front, I understand that the question of the Havrincourt operation is at present in abeyance.

“There remains a possibility of the use of tanks in raids which rests on a matter of policy on which a ruling is asked.

“Tanks can undoubtedly be used with or without infantry on this front, south of Quéant, at many points.

“They could be used by day under smoke barrage or by night throughout the winter months against hostile advanced posts or outpost lines. This would produce a considerable moral effect, inflict some losses and cause unrest in a part of the line used by the enemy to rest his troops. . . .”

The outcome of this letter was that we obtained permission to withdraw four Battalions of tanks and were instructed to reconnoitre the First Army front about Lens. This we did and sent in our report on the 18th. On the 24th General Capper sent the C.G.S. an elaborate scheme for an operation north of St. Quentin, and, on the 28th, at a War Office Conference, General Butler, the D.C.G.S., stated that the low priority of tanks in the production list would remain as it was, and that though a tank for exploitation would be valuable, this machine remained “an adjunct to an infantry attack.”

What happened, if anything, during the first fortnight of October I do not know. But I cannot help feeling that the fiasco at Poelcappelle on the 10th at last opened the eyes of G.H.Q. Anyhow, on his return from a visit to G.H.Q., on the 15th, Elles was very secretive; but when he pulled out a map of the Third Army front and placed it under some papers, he unintentionally told me all that I required to know, namely that an operation on that front was being considered. The next day he paid another visit to G.H.Q., on the question of tank expansion, so he said, and then, on the 17th, he motored over to the Third Army with reference to tank training at Bray—I inwardly smiled. On the 19th, Uzielli having left for England the day before, Elles informed Searle and myself that an extensive tank operation was to take place on the Third Army front on November 20, and at the exact place selected by me on August 4, and outlined in my project of August 8, a paper which had found its way to Mr. Lloyd George, Mr. Winston Churchill, Sir Arthur Duckham and Sir Albert Stern.

The next day Elles and I, with blue goggles on and with our Staff tabs and cap bands removed, visited the projected railheads in the Third Army area, and, on the following day, a Sunday, the forward villages in that locality. I remember that visit well. We motored to Gouzeaucourt, a large ruined village, and there told the driver to go back and wait for us at Metz-en-Couture. Then we walked to Villers-Guislain, then to Gonnellieu and through Gouzeaucourt Wood back to our car. It was a wonderful sight from a tank point of view, especially after Ypres; the ground was perfect "going," and I, perhaps a little elated, stepped out faster than usual. As the twilight began to close on us we were striding through Gouzeaucourt Wood, I a length or two ahead, and I remember so well Elles calling out: "Boney, for God's sake stop walking!"

Next came a delay: on the 22nd Elles went to G.H.Q.

and found nothing settled. Again he went on the following day and could obtain no decision. Then, on the 24th, the preparatory flag fell and we at once summoned a Conference of Brigade Commanders for the 25th.

Our problem was a formidable one: we had just under four weeks wherein to prepare for the battle. This included refitting all our tanks, and at this time four Battalions were still in the Ypres area, and what seemed equally difficult, in devising some means whereby a twenty-six-ton machine of length sufficient to span a gap of ten feet could be induced to span one of fifteen or even more. This problem was forthwith solved by Searle and his engineers in a most effective way. He decided to carry on the nose of each machine a great bundle of brushwood ten feet long and four and a half feet in diameter, which could be tumbled into the trench, and, by half-filling it up, enable the tank to rest on it and crawl out over the parados at a considerably reduced angle. This work entailed cutting some 400 tons of brushwood, much of it in the forest of Crécy, bundling it into 21,500 ordinary fascines, and binding them together with chains into bundles of seventy-five each. Besides this work, Searle arranged for the construction of 110 tank sledges, upon which supplies were to be hauled; the repair of 127 tanks, and the fitting of grapnels and cables to thirty-two machines, so that they might clear away wire entanglements on selected lines of advance for the cavalry. There were many other things the tank engineers had to do, and it can be said, without fear of contradiction, that in their work was laid the foundation of our eventual success.

In this, as in all our other preparations, the most important question of all was secrecy. For full success complete surprise was essential. In a disciplined body of men, such as an army, there is no difficulty in issuing orders or in getting them obeyed; yet to gag the mouths of those who are not directly let into a secret, but who overhear or notice things which rouse their curiosity, is

all but an insuperable problem. As regards orders, all tank badges were removed in the forward area; no reference to the projected attack was to be made over the telephone; movements were to be restricted to hours of darkness; transport was cut down; fires for cooking were to be reduced and artillery fire kept at normal. As regards those not directly concerned, I ordered a parade outside my office of all the administrative personnel at our Headquarters, including mess waiters, cooks, batmen, car-drivers and grooms, and said to them: "We are preparing for an operation which it is vital to keep secret. Should you at any time overhear anything or suspect anything, don't say a word. Keep it to yourselves." And I will say this, every man played the game—they always do if they are warned. There are no more trustworthy soldiers in the world than our own. Fortunately also, on October 24, the battle of Caporetto began, and this provided us with the excuse that we were preparing to reinforce the Italians.

I will now turn to the Third Army plan which formed the basis of our preparations. It was called the "GY" operation, and was brought out in parts, like a serial story, the first appearing on October 25 and the last on November 18. On November 13 all previous parts were summarised in one paper, and it is from this compilation that I will now give an outline.

The object laid down was to break the enemy's defensive system between the Canal de l'Escaut on the right and the Canal du Nord on the left by "a *coup de main*," and with the assistance of tanks to pass the Cavalry Corps through the gap, seize Bourlon Wood, Cambrai, and the passages over the River Sensée, and to cut off the troops holding the German front line between Havrincourt and that river. The intention, therefore, was:

(1) To gain possession of the quadrilateral formed by the Canal de l'Escaut, Sensée River, Canal du Nord; and (2) to clear up the area lying to the west of that quadrilateral.

The operation was to be worked out in three stages:

(1) The infantry attack on the German lines, including the capture of the crossings over the Canal de l'Escaut at Masnières and Marcoing, and of the Masnières-Beaurevoir line east of those places.

(2) The advance of the cavalry to isolate Cambrai, and to seize the crossings over the River Sensée.

(3) The clearing of Cambrai and of the quadrilateral, and the capture of the German Divisions thus cut off.

The task of breaking through the enemy's line was allotted to the IIIrd and IVth Corps.

The work to be carried out by the IIIrd Corps was as follows: (1) Establish a defensive flank along the Gonne-lieu-Bonavis-Crèvecœur Ridge; (2) secure the passages of the Canal de l'Escaut at Masnières and Marcoing and the Masnières-Beaurevoir line. And that of the IVth Corps was: (1) To occupy the Flesquières Ridge; and (2) Bournalon Wood on Z day.

Directly a breach was made, it was to be widened in order to allow the cavalry to move through and seize Cambrai. Then the right defensive flank was to be pushed northwards and the next cavalry objective was to be the line Valenciennes-Douai, with a view to cutting the communications of the German forces farther to the north and facilitating the advance north-east of the infantry.

From this it will be seen that the operation was in no sense a raid, but instead a decisive battle. When I realised this I was aghast, because, on August 4, I had selected this area of attack on account of it being advantageous to a raiding operation and *disadvantageous to one of decisive intention*. Further, from where were our reserves to come? Ypres was exhausting all we had left; and further still, I had suggested the use of dismounted cavalry, and I could not believe that masses of mounted men would accomplish anything decisive, even if faced by a disorganised, retreating enemy. I talked these things over with Elles, but it

was not until later on that I placed before him certain of my doubts in writing.

However, there were compensations for my alarm. The area chosen was admirable from the point of view of tank movement. It consisted in smooth rolling uplands, varying in levels, but at no point abruptly so. Valleys, spurs and slopes gave irregularity to the formation of the ground. On the left front Bourlon Wood crowned a crest of land overlooking the Arras-Cambrai road, and on the right ran the Canal de l'Escaut, some 1,000 yards from which the attack eventually advanced. The surface of the fields was covered with a strong growth of grass, grey and withered in the late autumn, which lay like a mat for the tanks to move over. Fortunately, also, and I may as well mention it here, the days of concentration were favoured by low clouds and misty weather. From November 10 onwards there was little rain, consequently the surface of the soil was hard and dry on the 20th.

Besides, there was to be no bombardment, no preparatory counter-battery work and no cutting of wire. One thousand and three guns were assembled before the attacking Divisions moved into the area, of which 462 guns were 18-pounders, their allotment of ammunition per piece being 180 rounds smoke shell, 360 high explosive and 360 shrapnel. On Z day the action of the artillery was to consist mainly in the formation of smoke screens on the front and flanks of the attack, in order to cover the advance of the tanks, combined with neutralisation of hostile batteries and bombardment of observation posts, positions of assembly, rest billets and known centres of communication and command. The barrage covering the movement of the tanks and infantry was not to be a creeping, but a jumping one, lifting from one objective to the next. On the 20th it opened on the German front line at Zero, made three jumps to the first main objective, where it was maintained for 50 minutes. At Z + 102 minutes it lifted and made three jumps to the second

objective, which it reached at $Z + 188$, and on which it remained till $Z + 215$ minutes. Smoke barrages were thrown on: (1) The right flank; (2) Good Man's Farm; (3) Premy Chapel; and (4) the Flesquières Ridge.

The work of the R.F.C. was as follows: There was to be no increase in aeroplanes until Z day; then seven single-seater Scout Squadrons, one two-seater Reconnaissance Squadron and part of a Bombing Squadron were to co-operate as follows:

(1) Medium-distance reconnaissance to be concentrated on the roads and railways round Cambrai, the region east and south-east of the front of the operations and the approaches from the north.

(2) Bombing of the enemy's aerodromes, Headquarters at Caudry, d'Escadœuvres and the railway junctions of Douai, Denain, Busigny, Le Cateau and Valenciennes.

(3) As many Squadrons as possible were to attack the following ground targets: selected groups of batteries, troops, transport, etc., beyond the barrage.

(4) Fighting patrols to be kept out during the day, paying especial attention to the vicinity of the enemy's aerodromes.

Though these particulars interested us, our main work lay in solving the problem of how to break through the enemy's defences. On October 25, and again on the evening of the day following, a Conference of Brigade Commanders was held at Tank Corps Headquarters, at which the Third Army plan, so far as it had then been evolved, was outlined and explained. The object and frontage of the operation were discussed and the following objectives decided upon:

(1) First Objective: The main Hindenburg line from Bleak House to the Canal du Nord, including Ribecourt.

(2) Second Objective: The Hindenburg Support line from Bleak House to the Canal du Nord.

(3) Third Objective: Exploitation north of the Hindenburg Support line towards Cambrai.

To the IIIrd Corps were allotted the 3rd Brigade on its right and the 2nd on its left, the 1st Brigade being detailed to work with the IVth Corps. Parts of the 2nd and 3rd were to be held in reserve.

Next, as regards training arrangements: Because secrecy was imperative, all co-operative training with the infantry would have to take place outside the area; consequently it was decided that:

(1) The 1st Brigade would train with the 51st and 62nd Divisions at Wailly—our tank-driving school.

(2) The 2nd Brigade would train with the 29th Division at Wailly and with the 6th Division at Avesnes-le-Compte.

(3) The 3rd Brigade would train with the 12th Division near Bermicourt and with the 20th at the Loop, not far from Bray.

Secrecy was impressed upon all, and each Battalion was organised as follows: thirty-six fighting tanks, six spare fighting tanks, two haulage supply tanks, one wireless tank, and three or four wire-pulling tanks.

On the 27th I issued a movement order to Brigades, giving the dates they were to entrain from Second Army and Tank Corps areas and proceed to the Third Army area, these moves taking place between October 31 and November 7. And that same day I issued a training note on "Tank and Infantry Operations without Methodical Artillery Preparation," a summary of which I will give in the following chapter.

On the next day a provisional distribution of tank units to Corps was made, and in it it was suggested that three Companies should be held in Army Reserve. This in my opinion was dangerously low, for from the first survey of the operations I was of opinion that at least two Battalions should be held in reserve. But on this point I was overruled. Then it was decided to cut down this meagre reserve to one Company, and eventually to dispense with a reserve altogether—a foolish and, as I will show, a fatal decision. It would be waste of time here to enter into

detailed reasons for this false step. The truth is that, because the whole plan of attack was a novel one, the Third Army General Staff, naturally somewhat nervous, fell an easy prey to the fears of Corps and Divisional Commanders, and to palliate them and allay their nervousness they violated one of the most elementary maxims of war. Thus it came about that the final distribution in detail was as follows:

Tank Bde.	Tank Bn.	Corps.	Divn.	Bde.	No. of Tanks.	Objective.	Exploit Towards.
3rd Bde.	C	III	12th	35th	24 4 ¹	Blue	Crèvecoeur
3rd Bde.	C	III	12th	37th	12 2 ¹	Brown	
3rd Bde.	F	III	12th	36th	24 4 ¹	Blue	Masnières
3rd Bde.	F	III	12th	36th	12 2 ¹	Brown	
3rd Bde.	I	III	20th	61st	18 3 ¹	Vacquerie	Crèvecoeur
3rd Bde.	I	III	20th	61st	12 2 ¹	Blue	
3rd Bde.	I	III	20th	62nd	6 1 ¹	Brown	
2nd Bde.	A	III	20th	60th	18 3 ¹	Blue	Canal, Masnières to Marcoing
2nd Bde.	A	III	20th	60th	6 1 ¹	Brown	
2nd Bde.	A	III	29th	—	12 2 ¹	Rumilly to Nine Wood	
2nd Bde.	B	III	6th	16th	24 4 ¹	Blue	Marcoing
2nd Bde.	B	III	6th	16th	12 2 ¹	Brown	
2nd Bde.	H	III	6th	71st	24 2 ¹	Blue	Nine Wood
2nd Bde.	H	III	6th	71st	12 2 ¹	Brown	
1st Bde.	D	IV	51st	152nd	42	Blue	Fontaine Bourlon Wd., Bapaume-Cambrai Rd.,
1st Bde.	E	IV	51st	153rd	28	Flesquières	
1st Bde.	E	IV	62nd	186th	14	Brown	
1st Bde.	G	IV	62nd	185th	42	Havrincourt	Bourlon Village, Graincourt

¹ In mechanical reserve, to replace breakdowns.

Besides these 376 fighting machines, each Tank Brigade had eighteen supply tanks or gun carriers used as such, and three wireless tanks. Thirty-two machines were specially fitted with towing gear and grapnels to clear the wire along the cavalry lines of advance; two for carrying bridging material for the cavalry, and one to carry forward telephone cable for the Third Army Signal Service. The grand total was, therefore, 474 machines.

Movement orders for rail journeys to the Plateau Station were next issued, and a vast number of administrative arrangements made, including collecting trucks, of which there was at this time a marked shortage, and forming dumps of petrol, ammunition, etc. All these preparations took an immense amount of time, trouble and work, not because they were difficult in themselves to arrange, but because all of us were as yet novices in arranging them; we lacked the technique which some nine months later through experience became ours. We were, in fact, over-anxious and, consequently, over-cautious, and this alone doubled our work. Meanwhile we were in constant touch with the Third Army, and there anxiety was more marked than with us; for whilst the Army General Staff still doubted the tactical powers of the tank, we only doubted that through some administrative error or omission we should fail to develop those powers to the full.

On October 29 Elles and I visited Third Army Headquarters and had a long talk with General L. R. Vaughan, M.G.G.S. His and, I presume also, Sir Julian Byng's idea was, that in the initial attack tanks could not be too numerous. I pointed out to him that, in a battle so novel as the one we were contemplating, surprise and not numbers was the foundation of our strength. Thereupon I suggested to him the distribution shown in Diagram 11, which speaks for itself, and which has been copied from the actual map I used at the time. In place of a purely frontal attack with all nine Battalions in line, as it were shoulder to shoulder in a bayonet assault, I suggested

keeping out of the initial attack three Battalions on the left and one Company on the right. The three Battalions were to operate as follows: Directly Havrincourt was captured and the Hindenburg line east of it occupied, one Battalion was to move north of that village, and, whilst one of its Companies advanced northwards, flanking the Canal du Nord, my suggestion was that the other two should turn right-handed and take the Flesquières Ridge *in flank and in rear*. At the time I felt certain that I was right in suggesting this flanking manœuvre, and as events proved I was absolutely so. As regards the remaining two Battalions in reserve, I wanted these held back until the Flesquières Ridge was occupied, and then to launch them against Bourlon Village and Wood on the afternoon of November 20, or at dawn on the 21st. My suggestions were, however, disregarded, because, as I was told, the Divisional Commanders insisted upon the fullest tank support possible, as if quantity were necessarily a criterion of strength.

The decision of dispensing with a tank reserve and of putting all our eggs into the basket of our initial attack so perturbed me that, on the next day, I wrote out the following brief tactical note and placed it before Elles:

“ I consider the present distribution of tanks to objectives, viz. three Brigades less one Company, to be fundamentally unsound. It does not fulfil the requirements asked for in the plan, namely:

“ (a) To place the cavalry through Masnières and Marcoing on Z day.

“ (b) To assist the IV Corps to open the Bapaume—Cambrai road on Z + 1 day.

“ To carry out these requirements *at least* two Battalions are required, held in reserve and not involved in the initial fighting.

“ To fight without a reserve is similar to playing cards without capital—it is sheer gambling. To trust to the cast of the dice is not generalship.

“ If we have not sufficient tanks to carry out (a) and (b) and the initial operation, we must say so; if we have, we must change our distribution. To leave the present plan as it is and the distribution as it is is to accept failure.”

The truth is, that the plan as devised by the Third Army was not a work of art but a work of force—not the thrust of a rapier but the blow of a battering-ram. In the end, not only was our single Company in reserve thrown into the initial attack, but also the whole of the tanks of the 1st Brigade which had been allotted to it as a mechanical reserve; that is to say, the Brigade on the vital left flank, the flank which lay outside the bend of the Escout Canal, went into the battle with every tank it could muster. A greater act of folly it would be difficult to imagine.

On November 1 I issued to Brigades a memorandum on training and a paper compiled by Hotblack on the enemy's defences. Many other papers followed. Then, on the 3rd, we opened our Advanced Headquarters at Albert, camouflaging them under the name of “ Tank Training Office.” On the 4th we held another Brigade Conference, and, on the 8th, I attended a full-dress Conference at Army Headquarters at which Sir Julian Byng explained his plan to his Corps and Divisional Commanders, and at which General Kiggell and General Davidson, representing G.H.Q., were present.

To me this Conference was of intense psychological interest, for it showed that very few of the Generals attending it had any understanding of and, consequently, confidence in the powers of the tank. The two Corps Commanders seemed to be completely out of their depth, and, in spite of the obvious necessity for a free hand, the Cavalry Corps Commander, strange to say, tied his command down in such a way that in any conceivable set of circumstances it would have been impossible for it to develop its mobility.

In brief, at this Conference most of the discussion centred round what the cavalry should do. The 29th Infantry

Division was to assemble about Q.23 Central (a little to the north-west of Gouzeaucourt), and from there follow up the advance of the 6th and 20th Divisions until they had gained possession of the Hindenburg Support line, when this Division would move on Rumilly and Marcoing, opening a way for the cavalry advance. The cavalry were to be ready to move forward at Zero + 2½ hours, directly the line Masnières–Marcoing–Flesquières was occupied; the 5th Cavalry Division, supported by the 2nd, advancing on Belle Etoile (south of Cambrai), and the 1st on Nine Wood (Bois des Neuf), so as to isolate Cambrai from the Bourlon position. In themselves these movements may have been sound enough, though the first depended very largely upon whether the bridge at Masnières would be found intact. What was wrong was, not the dispositions, but the leadership. In place of moving as close up to the front as possible, Cavalry Corps Headquarters remained at Fins, six miles in rear of the nearest point of the front line and some twelve from Masnières, and no action was to be taken except by order of these Headquarters. This meant that opportunity would be lost, because all information would have to go back to Headquarters, and from there be transmitted to Cavalry Divisions, and by them to Brigades, and thence to Regiments and Squadrons. This is what I believe actually delayed the advance of the cavalry on the 20th; yet at the time General Byng never once criticised the Cavalry Corps Commanders' proposals, neither did General Kiggell, who, throughout this Conference, scarcely uttered a word, but sat pensively silent, wrapped in the profoundest gloom.

The truth is, that probably for the last time in the history of war cavalry were offered a fair chance of operating as a mounted arm. They, as we shall see, missed that opportunity, not because they lacked courage or audacity, but because their General, who should have led them, remained miles in rear. In the circumstances in which this battle was to be fought, a battle pivoting upon surprise and con-

sternation, it did not matter much what the cavalry dispositions were, or what objectives had been selected for them to advance on; but what did matter and what was of supreme importance was, that opportunity should be seized upon and exploited immediately it arose; that there should be no hesitation, no delay, no scribbling of orders, but instead an immediate advance on the tails of the tanks and infantry directly the Brown line was theirs, or even only fractions of it. That the cavalry did not do so, in my opinion, sealed their doom; for it is most unlikely that ever again will such an opportunity offer itself. In fact, occultly though it may be, November 8, 1917, was the end of an epoch; for the fateful dice were then cast, not by the enemy, but by their own leader, which brought them to an inglorious and bloodless ruin twelve days after this Conference was held.

CHAPTER VIII

KNIGHTS IN ARMOUR

OUR Advanced Headquarters were established in a small cabaret at the corner of the main street in Albert, and not far from the shell-riven cathedral from the tower of which hung by her toes the Virgin at a steep angle, offering, as it were, her divine child a sacrifice to a demented world. Like many another building, the cabaret had suffered severely from shell fire, every pane of glass having been convulsed out of its window-frames. By its front door stood a board informing the passers-by that here was to be found the "Tank Training Office."

From this damp and dingy dwelling I will for a moment turn to those who worked within its shaky walls. Since April I had become G.S.O.1 of the Corps, an appointment which carried with it the temporary rank of Lieutenant-Colonel. Substantively I was still a Major, and remained such until I was promoted a full Colonel in 1919. Meanwhile my original Staff had increased, Major H. Boyd-Rochfort had joined us as G.S.O.2 Training, and also Captain the Hon. Evan Charteris, whom Elles had got out from Tank Corps Command in London as a G.S.O.3 to compile our records and to write up our history; for I realised that one day its infant strugglings would make interesting reading. I may say here, that without the assistance of the records he compiled, parts of these memoirs could not have been written.

Charteris was older than most of us, and—I hope he will forgive my saying so—he was somewhat of a sybarite, an eclectic and an epicurean. In London he lived in an exquisite maisonette in Mount Street, surrounded by exquisite pictures, exquisite furniture and all in exquisite

taste. He was so obviously fashioned by his Creator to rule our mess, that his presidency over it was one of those gravitational processes which have no fixed origin. No sooner was he one of us than strange little packets arrived from Paris and London, containing beech-nut bacon, rose-leaf honey and rare exotic condiments. In the Cabaret "Des Hommes Morts," or whatever its true name was, often must he have dreamed of Mount Street. Now he sat in a room one of the outer walls of which had been badly holed, and over the gap some former occupant had fixed a hoarding, which, in more peaceful days, must have borne a gigantic poster of a dancing girl. All that was now left of this charmer was a wreath of white frilling from which saucily protruded a well-shaped leg. Facing this severed limb, Evan Charteris would sit in a fur-lined "British-warm" by an oil-drum stove, the smoke of which went anywhere but up the chimney, descending upon him in flakes of soot.

In this place of damp and sepulchral chilliness we worked; but we did not feed or sleep there, for our billets were a row of disused huts surrounded by a sea of mud which had once been a public garden. One member of our mess remembers them well, and especially our batmen, of whom he wrote: "But the servants as a whole were a band of the lowest type I ever saw. There was no thieving they would not indulge in, no foulness of language they would not habitually make use of. Headed by Edward's servant Pringle, they formed a sort of freemasonry of blackguardism, ingenuously keeping on the lee of detection, but always under suspicion. They were all able-bodied and of serviceable age, and if there is any justice under heaven will have been combed out by now and be corrupting other spheres of human life. Pringle, with his wall eye, his limp, his obsequious servility and his unfathomable viciousness, became almost an object of respect. His favourite trick was to point out the danger of leaving the mess alcohol unguarded at night, and thus finding an

excuse for sleeping in the presence of his fetish; this led to a far more rapid depletion of our stock."

This led also to Charteris volunteering to sleep in the mess hut, until one night, hearing a slight noise in the room, he flashed on his electric torch, and saw, some three yards away from him, an enormous rat leap from off a pat of butter. Then he abandoned the contest, surrendering to Pringle, to whom rats were but a minor inconvenience.

To turn from this pleasant interlude to work, before describing the battle, I will outline the tactics it was based upon.

Directly I heard that the operations had been decided upon, I started writing a tactical note, officially numbered "S.G.192." I knew the powers and limitations of both tanks and infantry, and all I had to do was to fit them to conditions and circumstances. I decided that, as the governing principle was surprise, the easiest way to co-ordinate action was to reduce tactics to a drill. In fact, the idea I had in my head was to elaborate a tank and infantry ceremonial parade—leaving nothing to the imagination of the performers. In short, Cambrai was to be a clockwork battle.

I will now give a summary of this training note—"Tank and Infantry Operations without Methodical Artillery Preparation":

"Tank Section Attack Areas.—Each objective will be divided into a series of 'Tank Section Attack Areas.' These areas should generally include a tactical point, for if these points are captured, it should not be difficult to clean up the trenches in between them. The area selected should be free of communication trenches, and when possible it should lie between two, so as to form a well-defined quadrilateral.

"Tank Echelons.—The tanks operating against each separate objective will constitute one tank echelon. Each echelon will consist of a number of tank Sections of three

tanks each arranged in a triangle: the leading tank being called the 'Advanced Tank' and the remaining two 'Main Body Tanks.'

" *Duties of Tanks.*—The duty of the Advanced Tank is to move slightly ahead of the Main Body Tanks in order to keep down the enemy's fire, whilst the Main Body Tanks, followed by the infantry, advance on his wire and trenches. Once this duty is finished the Advanced Tank will come into reserve. The duty of the Main Body Tanks is to place the infantry through the wire and to assist and protect them whilst capturing the area.

" *Number of Tanks to Frontages.*—The number of tanks to any one frontage will depend more on the number of tactical points this front contains than on its width. As a rough rule, the allotment of tanks may be calculated at one to every 100 to 200 yards of front.

" *Tank Formation of Attack.*—The tank unit of attack will be a Section of three tanks, one acting as the Advanced Tank and two as the Main Body Tanks. The formation of attack is one which will permit of tanks in Sections of threes being launched at definite tactical points, rather than one in line with tanks equally distributed along the whole frontage; because the object of the tanks is to penetrate the objective at several points; place the infantry through at these points, and then protect them as they work down the trenches.

" *Allotment of Infantry to Tanks.*—The infantry will follow the Main Body Tanks. The normal allotment will be one Platoon of thirty-six to forty men immediately behind each tank, and followed by other Platoons in rear which will use the same paths crushed through the enemy's wire.

" *Formation of Infantry.*—In order to facilitate the approach, infantry will be organised in Section single files. Whoever is at the head of the file is automatically file leader. This formation enables command to be maintained during the approach, and it is most convenient when working with tanks, as eventually single files have to be formed in order to move along the paths through the enemy's wire.

“ *Organisation of the Infantry Formation.*—The infantry for each objective will be organised in three bodies: (1) Trench Cleaners; (2) Trench Stops; (3) Supports. [Diagram 12]. Their duties will be as follows:

“ (1) To work with the tanks and clear the trenches.

“ (2) To form ‘stops’ in the fire trenches where communication trenches join them, and to mark the paths through the wire by means of flags, so that those following may see where the gaps are.

“ (3) To support (1) and (2) and form an infantry advanced guard on the far side of the trench so as to cover the advance of the next echelon.

“ *Forming up for attack.*—Tanks and infantry will usually form up during hours of darkness; consequently the most complete preparations for their assembly must be made beforehand, all falling-in and movements being reduced to a simple drill.

“ Preparation will consist in marking out the exact places where tanks and infantry will stand and in taping and preparing routes to the starting-points and forward from them. The diagram shows the method of forming up.

“ *The Attack.*—The Advanced Tanks will cross straight over the enemy’s wire and swing to the left and then move along the enemy’s trench close to the parapet. They will not cross the trench until the Main Body Tanks and infantry are over. [Diagram 13.]

“ The Main Body Tanks will cross the enemy’s trench at the same spot, so as to economise in fascines. The left-hand one will move to the left and along the fire trench, whilst the right-hand one will move forward to the support trench, where, if necessary, it will cast its fascine and cross over, then turn to the left and work along the support trench. [Diagram 14.]

“ Once a Tank Section Attack Area is cleared, the tanks will rally. Should a tank break down, the infantry will press on by themselves.”

These tactics were approved of by the Third Army, and issued to all tank and infantry units concerned.

On November 1 I wrote to our three Brigades on the question of training, and among other things I said:

“ The IIIrd and IVth Corps are carrying out the attack, and as tanks are being used only to assist in it, consequently all training must be arranged for by Corps. They must set the pace, for unless they do so and feel that they are responsible for the training as for the attack itself, their officers will not gain that confidence in tanks which is essential.

“ Though the Corps are responsible for training, Brigade Commanders must remember that the attack tactics and training now required are totally different from those infantry are accustomed to . . . consequently every endeavour must be made to win over their confidence. Simplicity in training is the surest way of doing this. It is better that one or two movements be learned thoroughly than half a dozen partially. The first thing that the infantry must be convinced of is, that tanks are able to put them through the wire.

“ In the approach march, the security of the infantry will depend as much upon the celerity of their movements as on the protection tanks will afford them.

“ The Section single files must not move in parade order; they must open out to considerable intervals between files on a staggered frontage, and advance by short bounds. If fired on, each Platoon has a Lewis gun of its own to assist it. The infantry have got to realise that their safety and success depend upon using their rifles and Lewis guns; that is, fighting with the tanks and not simply in following them. This is what is meant by co-operation, and training will be based upon that principle.”

The actual training was carried out by all infantry units selected to take part in the attack. A paper was issued to them outlining the powers of the tank and what it could and could not do, and how infantry could co-operate with it and make good some of its limitations. Then they were asked to dig deep trenches and to wire them as they liked.

Some of the entanglements they constructed were truly Gargantuan. I remember one which consisted of nine-inch pit props standing about five feet out of the ground and so thickly entangled with wire that it was difficult clearly to see through it: it would have stopped anything from a runaway traction engine to a herd of panic-stricken elephants. Up to it crawled a Mark IV tank followed by incredulous foot soldiers. Then a most astonishing spectacle was witnessed. They expected it either to be held up or to crash its way through. Instead, as it slowly advanced its tracks engaging on the tops of the props pushed them gently into the ground until they disappeared, and, a minute or two later, the tank emerged on the far side, having crushed down two neat and symmetrical paths so closely and evenly compressed that the infantry were able to move along them at the double.

The cavalry were equally astonished. At Wailly there were miles of German entanglements, some of them thirty to forty yards deep. Fifty- to sixty-yard gaps in these were cleared by the wire-pulling tanks in about five minutes, and the ground was left so free of wire and pickets that it seemed as if it had been swept by a gigantic vacuum cleaner.

Then again there were the supply tanks, fifty-four in all, each carrying two tons of supplies and hauling five more on sledges over wire and trench. That makes 378 tons, or 846,720 lb., or, allowing 40 lb. as a man-load, then a bulk load which would have required 21,165 men to carry it forward. Actually the human power required to work these tanks was 162 men—all behind bullet-proof steel.

This training was the most fascinating I have ever watched, and, without exaggeration, directly the infantry saw what tanks could do, their confidence in them was unbounded.

The only hitch occurred in the 51st Division, which was commanded by General G. M. Harper, a soldier who, though highly respected by his men and possessing several outstanding qualities, was one of those peculiarly stubborn

persons who cannot brook a suggestion or an idea they have not made or conceived. Not believing in tanks, apparently because he was not their originator, he first proclaimed the idea underlying the battle to be "fantastic," and then, through his stubbornness, proceeded to render it so in fact.

In place of training his Division in accordance with the tactics issued by the Third Army, he invented a tactics of his own. He first formed Sections of four tanks in place of three; in each of which he detailed one machine as a "Wire Crusher." Behind were to advance the remaining three at a distance of two to three hundred yards and in line abreast with intervals of fifty to seventy-five yards between tanks. In place of the leading infantry following on the tails of these machines, they were instructed to follow 100 yards in rear of them, and, on striking the enemy trenches, tanks and infantry were to turn to the right instead of to the left, the only possible reason for this being that "left" had been laid down in the order; for in actual fact it did not matter which way the tanks turned, *so long as all turned in the same direction.*

His tactics were purely silly, and this I explained to General Vaughan; but so deep-rooted was the doctrine of the delegation of command, that the man on the spot was left to put his Division "on the spot," at Flesquières.

Meanwhile, whilst training was in full swing, the final rail arrangements were made, and, on November 12, I issued "Tank Corps Order No. 1," which covered a variety of points. Then, on the 15th and 17th, I sent out two short instructions accompanied by a one- to five-thousand scale plan. These explained how the villages of Masnières and Marcoing were to be picketed by tanks, exact positions on the various roads being marked on the plans. These instructions were accompanied by a note explaining how to discover whether the bridges over the canal had been previously prepared for demolition. On the 18th I issued my last order and then closed my office, for long before

this I had made up my mind that unless everything that could be done had been done by that date, any further instructions would only create confusion.

That day I visited all our forward positions, and a remarkable sight greeted me. Tucked away in shell-battered houses, orchards and woods were over 400 tanks, and under their camouflage lay hidden away 1,000 guns. For nearly three weeks now, night after night and almost under the nose of the enemy, there had rumbled up the Metz and Gouzeaucourt roads thousands upon thousands of vehicles carrying forward tens of thousands of tons of ammunition, supplies and stores. Now all was still, as if some Wellsian comet's tail had passed over the autumn-chilled ground.

Then came the morning of the 19th—Y day. Elles entered my office and said: "Everyone has worked so splendidly that I think we ought to issue a Special Order. Will you write one?" I sat down and scribbled out something; then I tore it up and said: "No, you write it; you are far better at these things than I am." So he took my place in front of the oiled calico window and wrote the following on a sheet of waxed duplicating paper:

"Special Order No. 6.

"(1) To-morrow the Tank Corps will have the chance for which it has been waiting for many months—to operate on good going in the van of the battle.

"(2) All that hard work and ingenuity can achieve has been done in the way of preparation.

"(3) It remains for unit Commanders and for tank crews to complete the work by judgment and pluck in the battle itself.

"(4) In the light of past experience I leave the good name of the Corps with great confidence in their hands.

"(5) I propose leading the attack of the centre division.

"Hugh Elles, B.G.

"November 19, 1917. Commanding Tank Corps.

"Distribution to Tank Commanders.—H. E."

At first I remonstrated with him, pointing out that if he were badly wounded or killed, it would be disastrous for the Tank Corps. But he held out and persisted, and he was right and I was wrong. To lead his command was to give life and soul to all our preparations—it was spiritually the making of the Tank Corps, and in value it transcended all our work.

Then he wrote for me a note of instructions:

“ G.S.O.I.

“ (1) During my absence from H.Q. you will take charge of Tank Operations on the following lines:

“ (2) *Policy*.—(a) Tanks detailed for exploitation on Z day to go all out. (b) Remainder to be rallied at earliest moment. IIIrd Corps tanks to Army Reserve and ready to move north. (c) You will get the Army H.Q. to press IIIrd Corps on this point, IIIrd Corps and IVth Corps to press Divisions to disgorge their tanks directly you hear that Brown line is taken. (d) In the probable event of tanks being required north for Z + 1 day, the rallied tanks of 2nd Brigade should be available (say, twenty-four). It is no use their moving forward unless supplied properly and crews rested one night at least. (e) 2nd Brigade then to come under IVth Corps as soon as they can be moved. (f) 3rd Brigade tanks for north cannot operate till Z + 2. It may be expedient to open a base at Velu and allot 3rd Brigade to Vth Corps. (g) 3rd Brigade to follow 2nd Brigade into IVth Corps and 1st Brigade to be withdrawn from IVth Corps, evening Z + 1, into Army Reserve. (h) It will be necessary to arrange Brigade accommodation in IVth Corps and a Staff Officer should be attached. (j) The Battalion Staff should be left in the late 2nd and 3rd Brigade fronts to sweep up remains—probably ‘I’ or ‘B.’

“ (3) *Command*.—In the event of casualty, it will not be necessary or expedient to appoint a new Commander till one can be pulled out from less urgent duty and you will function in my name. In the case of a light casualty, Colonel Baker-Carr will act temporarily as senior Brigade

Commander. In the case of more serious casualty, Colonel Hardress-Lloyd should be appointed. The change consequent upon either would be: To act as Brigade Commander—Lieut.-Colonel Hankey; to act as O.C.G. Bn.—Major Fernie.

“The improbability of para. (3) being put into execution is great. 19/XI.

“H. J. Elles, B.G.”

At eight that evening Elles, Uzielli, Charteris and myself dined in our rat-infested little mess. We tried to make gay over a couple of bottles of champagne, but were not over-successful. We drank “good luck” to Elles, but as Charteris said some time later: “We were not really anxious or depressed; everything had been well done, and we were just aware that something stupendous was pending, something novel and unforgettably exciting.”

Two hours later Elles left the hut, and, as those who worked under me were already on their way to the battlefield, I retired to bed.

A little before six the next morning I was up. It was still dark and misty, when about a quarter of an hour later I left the hut and walked over to the G.S. office. As I neared the toppling Virgin, I looked at my watch—it was 6.18. I paused for what seemed a long time, though it was only two minutes, and then at length I heard a faint rumbling, like the ruffle of a distant drum. It was the opening barrage—the battle had begun.

Here I will let another speak, one more fortunate than myself, an eyewitness of this strange and portentous event—the birth of a new epoch in the history of war. And even to-day, eighteen years after this almost mythical battle was fought, his words fill me with a mysterious thrill:

“We got off at about ten—Mansfield, Dodd and myself. The night was impenetrably dark, but with headlights we spun along the Péronne road. The roads were quite

deserted, the air perfectly still. At Péronne we had to put out our lights, and thence crawl through the blackness. Mansfield knew the road by instinct, and we had no difficulty in finding the by-lane which led to his first wireless hut. Here the men were in various stages of sleep, five rolled in coats and blankets on the floor, two sitting by the light of a candle sheltered in a tumbler, a stove smoking very disagreeably and giving very little warmth, the whole in a key of khaki from the walls to the floor, tempered or rather deepened by smoke, with the faces of the men as the only variations in the general tone. Scraps of food lay about on the telegraph boxes, remnants of cake and smudges of butter, and the place looked little capable of being an adjunct to the battle. The sleepers snored on while Mansfield gave his orders to the sergeant in charge. The wind had sprung up and was beginning to sigh very drearily in the trees; outside a bit of corrugated roofing suspended on the wall of a barn began to swing in the wind and make an intensely dreary discord against the stone work; attempts to tie it up were in vain; it was there to swing in the wind, and nothing would stop it. From here we returned to the main road and struck north towards Metz. Just outside Fins we pulled up in the vicinity of another wireless hut; this was a larger installation, and here some dozen men asleep made a khaki pavement of the floor. As the telegraph instrument was at the far end, we had to try to find foot-room between the sleepers, but with very little success. Nothing, however, seems to wake a Tommy once asleep. When we got back to the motor, we could hear the tramp of men descending the road we had just passed over. Presently a section of the night seemed to be advancing slowly towards us, an indistinguishable mass of the darkness; they came at a pace which was just on the active side of standing still. As they passed us we learned that they were a Highland Battalion, part of the 51st Division that fought so well and suffered so heavily on the following day. None of them spoke, and their silence, the weight and slowness of their tread, and the solemnity of their passing by, bore such an implication of fate, and were shrouded with so much mystery by the

night, that one felt as if one were hailing men no longer of this world.

“ From this point we went on to Metz, where there was more symptom of movement. Here were road police, and wagons on the move, and the passing shadow of troops, and an occasional surreptitious electric torch. Here also we took a wrong turn and were followed by a water-cart with a team of four horses, which came within an ace of putting us out of action, but we extricated all right, backed out hand-led, and got on to the Metz-Gouzeau-court road; a mile of this brought us to the spot where Mansfield intended to cast anchor. It was a part of the road slightly sunk: immediately adjoining us was a clearing station of half a dozen tents with a candle burning (as we could see through the canvas) in one of them. This spot was about 2,500 yards from the Germans. Here we dismounted and started in search of a particular tank for which Mansfield had come provided with an earthenware keg of rum. The wind had dropped again, and the stillness was very little disturbed; the occasional sputter of a machine gun and the infrequent roar of a heavy gun seemed to shape the silence into intervening blocks. Very lights cast a pale, unnatural light over tracts of country and illuminated the clouds, which were lying low and heavy over our heads. It seemed to me hopeless to try to find any given tank, but Mansfield, tucking the rum under his arm, and looking like a sprite on the Brocken, plunged off at a great pace into the darkness. Very soon he picked up the strip of white tape which is laid to show tanks their way, and taking a line by this we followed across what seemed moorland, taking heavy falls, getting entangled in barbed wire, and periodically losing all trace of our white tape and one another. One could hear tanks moving, but purring very mildly on their second speed, and one could see pin-points of light, no bigger than fire-flies, issuing from their port-holes. Presently we came upon one in difficulties, and from the officer we learned that the one we were seeking was in front. Another half-mile brought us to a group of four drawn up in line-ahead in the neighbourhood of some trees; they were filling up

with petrol. Some of the men were trying to sleep on tarpaulins spread by the side of the tanks; behind them were their sledges laden with the drums of telegraph wires and reserves of petrol. Mansfield, having found his man, got into the tank and remained parleying for what seemed an eternity, while Dodd and I squatted outside. The Very lights were getting more numerous, and so were the bursts of machine-gun fire, as if apprehension was in the air and suspicion aroused; but the quiet was presently restored, and on our tortuous return journey it seemed as if the world was asleep with no dream of the coming day. It must have been about 3 a.m. when we found the motor again, and as sleep was unlikely, we walked down the road in search of company. Nearby we came on two of the staff of a Tank Brigadier, who told us tanks had successfully got to their places. A string of horses loomed up through the darkness and faded away across the moorland. The purring of belated tanks could still be heard; men passed at intervals, and while we were talking the black mass of a reserve tank emerged close to us, wallowed into the sunk road and clambered the other side, to be lost in the dark. About 4 a.m. we returned to the motor to try to sleep, but without success. At 4.45 a.m. there was a sudden outburst of firing; it seemed the usual thing, but proved to be otherwise, growing in intensity, spreading along the line and being accompanied by a great display of rockets and Very lights. By 5 o'clock we were thoroughly alarmed. Something must have happened—it looked for all the world as if the Germans were anticipating an attack. All round us was massed our artillery; the restraint imposed on them was dramatic: zero hour was at 6.20, and till then our guns were to do no more than their normal firing. The front was now ablaze, machine guns had taken up the challenge, trench mortars and rifle fire were in full blast, nor did it seem one of those mere panicky episodes that flare up suddenly in the night and as quickly subside. It was steady, sustained, and seemed to have some directing significance at the back of it. It was disquieting in the extreme, and we listened to the din with an anxiety that I never before experienced. It must have been about

5.20 that the fire began to dwindle. By 5.30 it had ceased and a complete stillness reigned. We were reassured. One could hear low voices in the clearing station close by, and a man whistling 'Tipperary' in the distance; a change was coming over the sky, presently we should see signs of day. The tension was extreme. We had calculated that it would take us about twenty minutes on foot to get to the end of the spur that projected between us and the front line. We were to start at six. Mansfield had brought some soup, so we now lit a spirit lamp, hiding it on the floor of the motor, and proceeded to breakfast. It was a nauseating concoction—hot water flavoured with stale turtle—but I had chocolate, Dodd some tabloids of Horlicks malted milk, and with these we managed very well, and at six started for our walk.

"The darkness had paled, partridges were calling to one another, one could distinguish differences of level in the ground, trees began to stand out from the darkness, and as we walked it gradually became apparent that we were stepping on ground that was lightish in colour, with dark patches which looked like winter heather. . . .

"We were about midway between the two flanks, which lay 10,000 yards apart. Along this front had been concentrated over 1,000 guns—some 680 18-pounders, the rest of large calibre. As we progressed towards the point of the spur it grew sensibly less dark; we could recognise that we were walking on long grey grass, we could see that on our left there was a small wood, undulations began to take shape, the Very lights began to lose some of their brilliance. It was indescribably still. The hour was very near, it was already 6.15. We were aware of men moving forward on either side of us. We surmised it must be the 29th Division advancing in support. Suddenly the air itself seemed to reel under a colossal blow, a dull and curiously mellow roar broke forth and continued with a peculiar rhythm, the atmosphere became alive with the scream of shells. We were at the end of the spur by now, and on the opposite slope we could see the shells bursting on the German trenches, while behind that again rose a huge black curtain thrown up by our smoke shells, which as they landed gave

the effect of the embers of a haystack. Splinters of flame were on every side like exploding stars in the night sky. The German trenches were throwing up rockets and S O S signals all the length of their line; these shone out vivid against the black curtain behind. Now the light of dawn began to creep up quickly, a cold grey light, with little power of illumination.

“The surprise had been complete and our artillery overwhelming; the reply of the German guns was negligible. The sight and the certainty that they had been taken unawares and were in confusion produced in one a sense of supreme exultation. On the slope opposite tanks showed up like small dull-coloured huts endowed with movement; as they advanced we could see the flashes of their 6-pounders along a line which stretched out of sight both right and left. . . .”

The first line was rapidly overrun, for resistance was slight. The advance moved on and the second line was cleared. The initial success was complete—tanks with infantry about them were triumphant on the field. In an astonishingly short space of time the Hindenburg line had been pierced and captured; the wire had been crushed like so many cobwebs, and the infantry had crossed to the far side with little loss.

The success had now to be exploited. Tanks rallied and were formed into groups to proceed to their specified objectives.

Two incidents only robbed the initial attack of being completely in accordance with plan. These were: the breaking of the Masnières Bridge, an event not altogether unexpected, and a definite check on the Flesquières Ridge, an event which was entirely due to faulty tactics. Both are of sufficient importance to warrant a mention.

As regards the first, the advance on Masnières was rapid, and when the village was entered the tanks were cheered on by a number of French civilians who had been

cut off from their countrymen for over three years. The enemy fell back and the bridge over the river was seized. It appeared intact, but in actual fact it had been damaged either by shell fire or partial demolition—probably the latter—and the result was that when the first tank moved on to it, it collapsed and the machine crashed into the water. Fortunately the crew were not injured, and whilst scrambling out the Tank Commander, who was completely bald, lost his wig as he heaved himself through the manhole. Nothing daunted, he grabbed at it, but it floated out of reach and, so tradition asserts, was later on “potted” by a German sniper. What, however, is true is: that after the battle was over he put in a claim for compensation, asserting that his lost wig was as much an article of clothing as a cap or a coat. All the regulations were consulted, and all the authorities quoted and misquoted. An interminable correspondence arose out of this bridge breaking, not because its collapse prolonged the war, but because no one could decide whether a wig was or was not an article of clothing.

Once the bridge had collapsed, the cavalry on this flank should either have bridged the canal or have moved on Marcoing, which was now in our hands, for that village had been taken almost in one stride, every tank moving to its allotted place according to plan. There the bridge was intact, though prepared for demolition, but so hasty had been the enemy's flight that the electrical wires had not been connected up. In fact, the enemy must have been thrown into a complete panic, for helmets, rifles and equipment were scattered everywhere, and breakfasts and unopened letters were found on the tables in the officers' billets.

Where were the cavalry? A few, I believe, crossed the canal, but where was the bulk—the masses which were to pour like an inundation through the gap? This brings me to the Flesquières incident.

It will be remembered that in my original distribution

of Battalions I had recommended attacking Flesquières from the west. One reason for this was that batteries of enemy guns were known to be in position behind the ridge, and though the IVth Corps was not directly responsible for the rejection of this distribution, the Corps Commander was responsible for General Harper's blundering tactics. What happened was that from the start of the advance the infantry of the 51st Division were so far in rear of their tanks that they were unable to communicate with them, and that, when the ridge was approached, the tanks, then some 400 yards in advance, were too far ahead for the infantry to notice where they had crushed down the wire. As the tanks topped the crest they were suddenly met by direct fire from a battery¹ of guns, and no less than sixteen machines were hit, and in addition two were damaged by the enemy's barrage. Though this was unfortunate, it was but an incident, and would have been in no way disastrous had the infantry been on the heels of the tanks; for then they would have crossed the wire and in a few minutes would have settled with the German gunners. Instead they could not find their way through the entanglements, and, whilst they were searching for gaps, a number of German machine gunners "came to life" in the ruins of Flesquières and shot the Highlanders down by scores.

The effect of this check was an extraordinary one. On the right of the 51st Division, the left of the IIIrd Corps penetrated the whole of the enemy's defences and, as already mentioned, occupied Marcoing, whilst on the left of the 51st Division, the 62nd Division forged ahead into the open country, as far as Graincourt. Therefore, except for an island, or rather peninsula, of resistance around Flesquières, the whole of the defences between Marcoing and the Canal du Nord were penetrated: what were the cavalry doing?

Masses of them had assembled in and along the Grand

¹ There were three or four batteries near the village.

Ravin, which runs south of Ribecourt and Havrincourt, and there they waited. All they had to do was to wheel right and left, put spur to their horses, and the open country was theirs. They did nothing but wait; because they were commanded not from the front but from the rear. Had they moved forward round the flanks of Flesquières and then dismounted, they could have cleared the village in half an hour. Had they gone forward north of Havrincourt, they might have pushed on beyond the leading troops of the valiant 62nd Division, the men of which were now dead beat, and have occupied Bourlon. Instead, they did nothing but wait and wait. It was not their fault, though in the circumstances their leaders should have disobeyed their orders; it was the fault of their Command, which was handling a pursuit on trench-warfare lines.¹ Their inaction and not the blundering forward of a line of tanks on to the enemy's guns was the ruin of this battle.

By 3 p.m. our line of attack, from right to left, ran approximately as follows: Gonnellieu-Bois Lateau-north of Masnières-north and east of Marcoing-Bois des Neuf-Flesquières-Canal du Nord, with troops in Noyelles and

¹ The Cavalry Corps orders, etc., issued at this time and after the battle, provide the following information: The Cavalry Corps consisted of five Cavalry Divisions, the 1st, 2nd, 3rd, 4th and 5th. The whole, less the 1st Division, was to cross L'Escaut Canal at Marcoing and Masnières. At zero hour, on Z day, the 1st and 5th Divisions were to be in position of readiness at Fins and the 2nd at Villers-Faucon. The 4th and 3rd were to concentrate at Fins when 5th and 1st had moved forward. At 6 a.m. on Z day, the 1st Division was to come under the IVth Corps and work in co-operation with the 51st Division; it was to move via Metz-en-Couture on Ribecourt and thence on Bourlon, attacking it from the north and east. In the Cavalry Corps orders, issued on November 10, we read: "The order for the forward movement of the Cavalry Divisions from their forward concentration areas will be issued by Cavalry Corps. This order will be issued as soon as it appears that the situation is favourable and that there is a possibility of a cavalry advance. . . ." The 1st Division was similarly tied down by the IVth Corps. In his report on the battle, the 1st Cavalry Divisional Commander writes: "Time does not admit of sending the information back to the rear and for the re-transmission to the front. . . . It is most urgently represented that the leading Cavalry Division should be given the plan and be allowed to carry out the task allotted in the best way that offers." At 5.40 p.m., on the 20th, the bulk of this Division was still about Ribecourt, and at 6 p.m. in the Cavalry Corps War Diary we read: "The situation was such that it was not possible for the cavalry to carry out its original task. Owing to shortage of water for horses and the congestion, the advisability of withdrawing the 2nd and 5th Cavalry Divisions for the night to the area about Villers-Faucon and Fins was considered." This was carried out.

Graincourt reported captured. Then the battle came to a halt, for there was not a single tank or a single infantry unit in reserve. Though planned as a decisive attack, the battle was in reality no more than a raid; for without reserves what else could it be? It was, as I had foreseen, a twelve-hours' affair. And a few days later I remember General Franchet d'Esperey entering my office and asking me a series of questions on what we had done. At length he said: "And where were your reserves?" To which I answered: "*Mon général*—we had none." Thereupon he exclaimed: "*Mon Dieu!*" and with true French politeness he turned on his heels and fled the room. I remember also, several years after this battle, talking to Colonel Fagalde, then Assistant French Military Attaché in London, and he told me that Sir Douglas Haig only informed the French G.Q.G. of the attack a few days before the battle was launched. Whereupon he was offered a complete French Corps as a reserve, but refused the offer.¹ French Generals in high positions have assured me of its correctness.

Whilst Elles was leading his line of battle in tank "Hilda," a good Saxon name, which I imagine would have pleased Martel, I sat in the G.S. office gazing at the oiled calico. I was not in the slightest anxious or nervous, for I was certain that the initial attack would be a walk-over—nothing but an act of God could prevent this. I was certain also that the battle would be a limited and in no strategical sense of the word a decisive one, unless another such act were to intervene. As for an hour or two I had nothing to do, I jotted down some notes for a study I had in my head on the use of tanks in 1918 and 1919. This may seem strange, but it was logical: I expected that the battle now blazing would melt the mental obesity of G.H.Q. How limited is human understanding; for in this I was quite wrong.

¹ The Historical Section of the Committee of Imperial Defence says that Dégoutte's XXI Corps (of two Infantry and two Cavalry Divisions) was made available.

212 MEMOIRS OF AN UNCONVENTIONAL SOLDIER

Then the telephone bell began to ring and messages at first slowly and then in numbers came in.

I will quote one or two of these. First, the following, a series which not only shows clearly the clockwork nature of this battle, but a series of a kind never yet seen in this war. These messages, I believe, were transmitted by a wireless tank; anyhow, they refer to the 16th Infantry Brigade:

Time.	From.	Purport.
6.29 a.m.	O.P.	Tanks passed enemy's outpost line.
6.36 a.m.	O.P.	1st wave passed enemy's outpost line.
7.20 a.m.	O.P.	Tanks and infantry approaching Hindenburg line.
7.25 a.m.	O.P.	Tanks on railway checked. Left O.P. reports Hindenburg line captured.
7.35 a.m.	O.P.	Wounded Bedfords report main line captured.
7.45 a.m.	Tanks	1st objective taken.
8.10 a.m.	Bedfords	Objective gained.
8.35 a.m.	Y. and L.	Situation on right not clear. Battalion H.Q. moving up.
9.00 a.m.	Y. and L.	Left and centre Companies gained objectives.
9.05 a.m.	71st I.B.	Well into Ribecourt.
9.15 a.m.	K.S.L.I.	Battalion H.Q. moving up.
9.40 a.m.	Bufs	Final objectives believed gained.
10.00 a.m.	16 Brigade	Brigade H.Q. moving forward. All objectives gained.

This is more like a railway time-table than a series of battle reports.

I might mention here, that though this Brigade fought on the 20th, 21st and 22nd its casualties totalled only 209; their detail is interesting:

Unit.	Officers.			Other Ranks.			Total.
	K	W	M	K	W	M	
1st Bufs	—	—	—	8	31	1	40
8th Bedfords	2	2	—	10	34	5	53
1st K.S.L.I.	1	2	—	15	61	1	80
2nd York. and Lancs.	—	3	—	3	16	—	22
16th M.G. Coy.	—	—	—	1	9	3	13
16th T.M. Bty.	—	—	—	—	1	—	1
	3	7	—	37	152	10	209

Let anyone, who cares to, compare these casualties with those of any front-line Brigade during the first three days' fighting of either the battle of the Somme or the battle of Passchendaele, and he will be startled by their moderation.

Here also is the summary of a report I received from Major D. Bingham, in command of the Wire-pulling Tanks which cleared the way for the cavalry:

“ Work was commenced immediately in the rear of the 2nd wave of infantry. . . . The wire on the Hindenburg Front and Support Systems came away in bundles easily. . . . All towing tackle worked admirably and there was no breakage of any kind. . . . Every tank except one completed its work. . . . The tank towing and laying signal cable reached Marcoing safely at 2 p.m. . . . On 1st Brigade, all wire on this route was pulled by 1.30 p.m. . . . On 2nd Brigade, all wire pulled up to Marcoing by 2 p.m. . . . On 3rd Brigade, all wire pulled by 1.30 p.m. All tanks rallied at R.17.a., except bridging tanks, which went on to the canal.”

Such was another piece of clockwork.

Later on Elles returned, and we were delighted to see him safe and sound. He was elated, yet I knew that the battle was over, or rather that it should have been proclaimed as over; for without reserves it was like an engine running out of fuel. However, this was not to be, so, at noon on the 21st, I issued “ Tank Order No. 2,” which opened by stating that “ The Third Army Commander intends to push the attack to the utmost. . . . The operations will be carried out in two phases: (1) The capture of the Bourlon heights; (2) the attack on the Inchy en Artois—Fontaine les Croisilles—Pelves—Pallue Quadrilateral. **IT IS ESSENTIAL THAT THE ENEMY BE KEPT MOVING AND BE GIVEN NO RESPITE.**” But where were the reserves to accomplish this? As regards tanks, we had to shift the battle-worn 3rd Brigade from the IIIrd Corps area to the

IVth Corps, a lateral move which cut most of the telegraph and telephone wires and caused unbounded confusion. So far it had been a knights-in-armour battle; now, on account of the lack of reserves, it was to become a *mêlée*, a series of gallant, heroic, confused and hastily patched-up ramshackle attacks in which infantry and tanks were slaughtered and knocked out for no other purpose than that of continuing the fight.

Bourlon, Cantaing and Fontaine Notre Dame were stormed blindly, taken, lost and stormed again. There was horrible slaughter in the last-named of these villages, and I, who before the battle had spent weeks in thinking out its probabilities, had never tackled the subject of village fighting. I could have kicked myself again and again for this lack of foresight, but it had never occurred to me that our Infantry Commanders would thrust tanks into such places. I at once got out a tactical paper on this subject, but I knew only too well that no paper now could make good my oversight.

Concerning Fontaine, the difficulty was that all frontal attacks against it were raked on their right flanks by German guns and machine guns at La Folie on the canal. I went forward and saw this with my own eyes. I went back and explained what I had seen to General Vaughan. I remember him saying to me: "Sonny, I cannot make men." This annoyed me, and I replied: "No, sir, but you can lose them, and you will continue to do so as long as La Folie is not taken."

I remember also going forward one night towards Bourlon. On the way I looked in at IVth Corps Headquarters and found the General Staff issuing orders for the next day's attack. I hinted that it was useless sending out orders for an attack at 8 a.m. as proposed, because the attacking troops would never get them in time. Nevertheless, they went out as they were, with the result that the attack had to be put forward to the early afternoon, then it was put forward again, and finally cancelled. Late that

afternoon I was out with Elles north of Havrincourt Wood on the Bapaume-Cambrai road. As we left the car, I remember telling the driver to go back some 200 yards, for we had dismounted at a forked road. We walked on and presently stopped and looked down on a veritable inferno, in what, if I remember rightly, was called "Tadpole Copse." How men could live and remain sane in such shell fire I do not know—it was one incessant, unceasing tornado, and what for? It was getting late and night was approaching, when away on the right front of the copse and west of Bourlon Wood a barrage of smoke shells sent millions of sparks cascading through the gloom. I turned to Elles and said: "I thought that attack was cancelled"—the IVth Corps attack I have already mentioned. He answered, "Yes, I believe it was." On my return I found that it had been cancelled, but apparently only part of the attacking troops had received this information. What was the result? A useless and wasteful attack. Whether in this particular instance the IVth Corps was or was not to blame I cannot say; but what I can say is this: that there were many of these futile and hastily mounted attacks, and the fundamental reason for them was—lack of reserves. We walked back to the forked road, and there found a general service wagon derelict and two horses recently killed by a shell. It was fortunate that I had sent the car back, otherwise we should probably have lost it and the driver—an admirable Yorkshireman.

By the 27th the battle had developed into the normal ding-dong tactical clinch, and, realising this, Sir Julian Byng wrote to General Elles the following generously worded letter:

"MY DEAR ELLES,

"As far as the Tank Corps are concerned, I think I may say that the operations of the Third Army have come to an end, and it remains for me to write a short appreciation of the value that I and my Army obtained from the corps you command.

“ To say that the operation without tanks was an impossibility is merely a truism, but to say that the far-reaching success was due to the co-operation of your Corps with the infantry and artillery is the point of view I wish you to realise.

“ No one could have been so well supported, so greatly helped and so consistently strengthened in the plan as I have been by you and your Staff. And no Army has ever been so splendidly led and so fully assisted as mine was by your Corps.

“ The many calls on your men’s endurance have been answered with the greatest alacrity—their losses have been heavy and their work prodigious, but they have established a record now which none can dispute.

“ I have never doubted the efficiency of your Corps and its machines, and I know that the future will add to your successes.

“ It remains merely for me to thank you, your Staff, your Officers, N.C.O.s and Men, which I do from the very bottom of my heart.

“ Good luck to you and everyone in your Corps.

“ Yours sincerely,

“ J. BYNG.”

The next day, at 7.30 p.m., I issued “ Tank Corps Order No. 3,” notifying the withdrawal. The three Brigades were to concentrate in the Loop area as follows: 1st Brigade—Méaulte Camp; 2nd Brigade—Bray Camp; and 3rd Brigade—Camps 165 and 166 on the Albert—Bray road; the concentration to take place on December 1 and 2.

At the time, little did I think that within forty hours we, in our turn, were to be surprised.

The following afternoon Elles and I motored out to visit the front. From Gouzeaucourt we walked to Villers-Guislain and then back. The stillness was profound, scarcely a shot was fired. I remember remarking to him: “ Where is our reserve line ? ” for we could find no system of entrenchments between our front and those villages.

At Metz we pulled up to let a Battalion of Guards through. It had been withdrawn from the Bourlon area, and a Sergeant asked me where his men were to be billeted. The question rather surprised me, as not a roof was standing in the village. We crawled home with headlights out, and, as we mounted a rise in the road, we were met by an enormous Holt tractor with two great girders inclined upwards and outwards, looming black, like devils' horns, athwart the twilight. Long should I have forgotten this vision of ill-omen had it not been for the events of the following day.

On the 30th I was in the office, when a little after 10 a.m. the telephone bell rang and the information came over the wires that the Germans had attacked, had taken Gouzeaucourt and were advancing on Gouzeaucourt Wood. Was this a joke or an actual fact? This question was at once answered by the arrival of a telegram. It was a fact and true. At Headquarters we could do nothing except send Staff Officers forward, and forward they went. The 2nd Brigade was out of the line at Fins, machines dismantled and the men cleaning up preparatory to entraining. All depended upon the man on the spot, and most fortunately Colonel Courage, who was on the point of leaving the camp, was still there. He had received the information of the surprise attack at 9.55 a.m., and then accomplished what I have always considered to be one of the most remarkable tank achievements of the war: at 12.40 p.m. twenty-two tanks of B Battalion were ready and, closely followed by fourteen of A Battalion, they moved forward from their tankodromes towards Gouzeaucourt. It is not too much to say that these tanks, followed by others as they were refuelled and manned, went far to save the situation on the 30th, and were one of the main factors in restoring our line on the following day. An admirable description of the confusion of this event is given by Major S. H. Foot in his book *Three Lives*, and Foot was Courage's Brigade Major at the time.

The German attack had been well planned. It consisted in two assaults: the right one against the Bourlon position and the left against the Villers-Guislain flank of the Third Army. The first made little headway, as it was opposed by men who were ready to fight; the second led, however, to an easy success, because the advance northwards had so pulled out the trench garrisons on this flank that they had lost all resilience—like a taut string, a slight cut sent the halves flying in opposite directions.

Again crops up that crucial word—"reserves." Had there been any, this flank need not have been "pulled out," and I was told that General Snow, commanding the VIIth Corps, had pointed this out several days before the attack was launched. It was a bold thrust, and though it failed in gaining a decision, it caused panic, not only in front, but far in rear. There can be no doubt in my own mind that at G.H.Q. the glory gained by the Tank Corps on the 20th was effaced by this minor disaster, which was directly attributable to fighting without reserves and had nothing whatever to do with the value of tanks.

Before passing on to the next chapter, I will summarise a few of the tank lessons learned during this battle, not by the Tank Corps Staff, but by the Third Army, because they prove conclusively that our tactics were sound, and had they been followed, this battle would have been a greater success than it actually was.

"(1) If success is to be achieved, the closest possible liaison is necessary between the units of the Tank Corps and formations with which they are operating.

"(2) It is necessary to keep a large reserve of tanks to make up for the unexpected losses in any particular part of the field of operations. The attack at Flesquières was held up because the tanks allotted to that part of the line became casualties and there was no adequate reserve with which to replace them.

"(3) The present tank cannot deal with parties of the

enemy occupying the upper storeys of houses. [Remedies suggested.]

“(4) During an advance tanks must not get too far ahead of the infantry. . . . If the tank passes on . . . there is a great danger of hostile machine gunners reappearing from dugouts, etc., and preventing the passage of the infantry through the lanes already made by the tank in the obstacle.

“(5) The infantry must not expect too much from the tanks. They must assist in their own protection. . . . They must also assist tanks forward when under anti-tank gun fire by engaging the battery. . . . This all necessitates more training with tanks for the infantry who are going to co-operate with them.

“(6) Tanks used in small numbers are only frittered away. After an operation the tank crews are very tired, and supplies of oil, petrol, etc., are exhausted. . . . If, therefore, it is desired to continue the advance with tanks on Z + 1 day, a completely new formation of tanks should be earmarked.”

After reading these six lessons, it would be ungracious to say: “I told you so”; because their acknowledgment shows that the General Staff of the Third Army was endowed with a generous spirit, and was not only willing but anxious to learn. How different would it have been had Higher Headquarters acted similarly!

CHAPTER IX

DOUGH WITHOUT YEAST

THAT half an inch of steel will keep out half an ounce of lead is a fact which cannot be disputed. Did G.H.Q. realise its tactical significance? No, not even in the most elementary way. That Sir Douglas Haig may have been pleasantly surprised by the events of November 20 is possible; yet my firm belief is that, because they had not led to a great cavalry pursuit, the true value of the tank was obscured—it remained but an adjunct, and a minor and very complicated one at that.

Is there any proof of this? Yes. In the autumn of 1917 Mr. Churchill, in a far-seeing and closely reasoned paper, set forth his views on the munitions problem of 1918. In it, so I understand, he pointed out that to attempt to exhaust the enemy's man-power could lead only to the exhaustion of our own, and that though "blasting power" was required, without "moving power" it was of little use; further, that the tank was the supreme instrument which could and would re-establish movement on the battlefield. These statements were made a month before the battle of Cambrai, which proved their correctness; yet three days after that battle, what were Sir Douglas Haig's opinions?

Because infantry units had already fallen so far below establishment, should Mr. Churchill's proposals be adopted not only would a large number of officers and men be required to man railway guns, trench mortars, tanks, etc.; but, further still, man-power would be used up in manufacturing these weapons. Turning to tanks, which seventy-two hours before had performed the star turn of the war, he considered, though they were valuable under certain

conditions and to some extent for certain purposes, that as suitable conditions for their employment could not always or even often be found, their value was strictly limited. Further, that experience showed [? Flesquières] that methods of defeating a tank attack had already been discovered. Consequently, their place in the existing productions priority list, as agreed upon on August 20, 1917, should stand.

Did the War Office, then headed by Sir William Robertson, support these views? Yes. As regards tanks, it was pointed out that they absorbed large numbers of men in their manufacture and maintenance, and to exploit this machine to the prejudice of rifle power would end in exalting the servant above the arm it existed to assist and serve. Finally, it was recommended that our remaining resources of man-power should take precedence as follows: (1) Aircraft; (2) artillery and ammunition; (3) mechanical transport; (4) locomotives; (5) tanks; and (6) rope railways. That tanks were placed next but last to rope railways is surely one of the most delightful ironies in the history of this war.

One man alone, so it seems, saw otherwise, namely Sir William Furse, M.G.O. He pointed out that the tank was not an infantry replacer, but an infantry reducer, and that a frontage of attack which required a large number of infantry when tanks were not used would require a lesser number when they were. He even went so far as to suggest increasing the Tank Corps from nine to thirty-six Battalions, and that the additional personnel could with ease be taken from the cavalry, and that if cavalry were to remain sacrosanct, then an Infantry Division should be broken up and its personnel handed over. This was red revolution—the idea of a far-seeing man.

At the time we in France knew nothing of this obtuseness of vision, and had we it might have depressed some of us, though, speaking for myself, it would have only stimulated

my energies; because I realised beyond a shadow of doubt that in the main my tactical ideas were correct. Anyhow, no sooner had the German counter-attack been repulsed, than Elles asked Uzielli and myself to return to the everlasting question of establishments, and to work out the details of what he called the Lower and Higher Organisations. The first to consist of 3 Groups each of 2 Brigades, each of 3 Battalions: a total of 576 Heavy tanks, 410 Light, 2,130 Officers and 22,523 O.R.; and the second of 3 Groups each of 3 Brigades consisting of 864 Heavy tanks, 610 Light, 2,827 Officers and 26,380 O.R. The reason for so slight a numerical difference is explained by the fact that, whilst in the Lower Organisation the ratio of administrative to fighting troops was 46 per cent. to 54 per cent., in the Higher it was 38 per cent. to 62 per cent. From this alone, there could be no doubt that the Higher was in every way the more economical, though it meant the addition of 4,654 officers and men, or, allowing for extra training personnel in England, perhaps 5,000.

We worked day and night on the details of these two Organisations, which eventually ran to thirteen pages of foolscap, covering such items as "Tactical Distribution," "Tank Output 1918," "The Utility of Tanks in the Third Army Operations" and "Notes of Interest." This was done, because we were informed that, on the 4th, a Conference, over which Mr. Churchill was to preside, would assemble at G.H.Q. to consider our future.

For us, this Conference was an important event, and I believe that I was the only member who took the trouble to take notes, because, so far as I know, none were ever published. Those attending were: Mr. Churchill, Sir Arthur Duckham, Admiral Moore, Generals Capper, Whigham, Butler, Nash, Elles, Travers Clark, Vesey and Wigram, Majors Drain and Alden, representing the U.S.A. Army, Searle, Uzielli, myself and a number of lesser Staff Officers.

Our paper on the two Organisations was placed before

the Conference, and General Capper set the ball rolling by summarising our experiences at Cambrai. Then General Butler (D.C.G.S.) stated that the Commander-in-Chief's views were as follows: "In 1918 the British Army was to act purely defensively. The rôle it had assumed during 1917 was, therefore, to be reversed. The Tank Corps would conform to this policy. Two Groups each of two Brigades would be located in the forward area, in order to economise in rail movements, and would constitute an immediate counter-attacking force. One Group of two Brigades would be kept in rear to act as a mobile reserve. The Commander-in-Chief would adhere to the Lower Organisation, namely nine Battalions of Heavy and nine of Light tanks with the necessary administrative services. Tank production should, however, be based on the Higher Organisation, and the men for the nine extra Battalions were to be found from Munitions, the Navy, the U.S.A. and the Colonies"—a somewhat mixed and stimulating bag!

Then Admiral Moore pointed out: "That the supply of tanks would depend upon the G.H.Q. priority list, and that if this were altered in favour of tanks, he hoped to reach the full output for the Lower Organisation by June and for the Higher during August."

Mr. Churchill thereupon suggested: "That tanks should be given priority next after the R.F.C., and that by cutting down the output of steel for shells by half a per cent. per month for four months, all the steel necessary could be found."

This suggestion winded the soldiery, and a long wrangle on the dangers of cutting down shells by half a per cent. followed. Absurd and quite irrelevant arguments were urged, and throughout this discussion I shall never forget Mr. Churchill's face: a sardonic smile played about his lips, which clearly showed his contempt for the opinions of the speakers.

Then General O. E. Vesey stated: "That the existing

establishments of the Army were 1,100,000 men short; that 540,000 men were required to maintain the present strengths; that existing legislation could produce only 60,000, and that, consequently, special legislation was necessary."

These figures flummoxed the soldiers, whereupon a wild discussion ran round the table. It began with "Could tanks cross canal locks?" and ended with "Could a 2-pounder shell penetrate a brick wall?" When confusion had become so confounded that the Generals had forgotten what next to say, the Admiral suddenly remarked, "That he could lengthen 300 of the Mark V tanks, and he hoped that this type would eventually be superseded by the Liberty, or Mark VIII, machine." As very few knew what he was referring to, somebody, who apparently knew less, as suddenly switched the discussion from the largest type of tank to the smallest—the French Renault, and informed the Conference that 9,000 were being built: 2,500 for the French, 1,200 for the U.S.A. and that we could have 300. Then there followed a grim silence, for apparently the speaker had forgotten who was to get the remaining 5,000.

This created an opportunity for the United States to man the breach, and Major Drain, a one-armed corporation lawyer hailing from the Middle West, arose and very sensibly suggested: "That the three leading Allied Powers—France, Great Britain and the U.S.A.—should combine in the production of tanks and also in their tactical use, in order that all three might fight as one Army." This was too much for the Generals, many of whom were getting exhausted, whereupon one suddenly had a divine call and suggested—for what purpose he did not disclose—a seventy-ton machine!

In its turn this was too much for Mr. Churchill, who got up and said: "Gentlemen, I came to this Conference full of hope. I came here expecting to be asked for more than I could give. I leave it disappointed, bitterly dis-

appointed." Whereupon he pulled on his coat and left the room.

After tea there was a second Conference, this time of a technical nature, apparently only so-called; for in my diary I record: "My mind was not left a blank; it resembled a kicked-over ant-hill."

The next day Elles went again to G.H.Q., this time to tackle General Kiggell on the everlasting problem. He found him sitting in his office thinking. His most important utterance was, at least so I was told: "I cannot yet see why cavalry should not be usefully employed on the battlefield?" My comment was: "How strange! If Kellermann could not break through men armed with flint-locks, it does seem extraordinary why Kavanagh should not, when they are armed with machine guns."

Then, on the 9th, I went to England to get some fresh air. I found Sonia working at the Grosvenor Hut, immediately opposite Victoria Station, and it was a treat to see how a small band of unpaid women, without a thought of reward, could work for the soldiers without establishments and unending Conferences. It was then that I finally resolved to take the bit between my teeth and work for what I believed to be right in place of arguing over what I believed to be wrong. G.H.Q. may have been honourable, honest, hard-working and sincere; but their mentality was prolonging if not losing the war. It was time to act.

On the following day I called at the Ministry of Munitions, then housed in the Hôtel Métropole, and there I saw Mr. Churchill. I opened my mind to him, and he was sympathetic. He told me he particularly wished to see Elles and myself together, and then he asked for some notes on tanks as man-savers, for a Cabinet paper he intended to write. These notes I handed to him on the 12th, and then left for France.

Less than a week later I was in England again, this time with Elles, when, on the morning of the 19th I received a

cryptic message from Uzielli bidding me see Lord Northcliffe. This I did, calling at 29 Abingdon Street at 5 p.m. I had never as yet met the great Press Lord. I took a seat, and he told me that General Kiggell was about to go. Then he asked me for my opinions on certain people, which I excused myself from giving, as such questions did not lie within my province, and, further, I was not sure why they were being asked. The next day Elles and I saw Mr. Churchill at 5 p.m. He told us that Kiggell was going, and he made no attempt to disguise his contempt for the little enthusiasm displayed for tanks at G.H.Q. What I remember most clearly is, that the room in which we were was an immense one; there were side tables at each end of it. On one was a glass of Vermouth, and on the other what looked like a cup of Bovril. Between these tables Mr. Churchill walked to and fro, expounding and expostulating, and now and again would halt before the one or the other to have a sip of Vermouth or of Bovril. On the whole, I think the Bovril won; for after sips of that liquid his remarks were particularly pungent.

On the 22nd we attended two most dreadful Conferences at Tank Command Headquarters, No. 1 Regent Street, and then back to France. . . . Christmas. . . . the Cambrai Christmas Card . . . a meeting of local mayors, at which, in spite of cigars and sweet champagne, no one would speak until I mentioned "potatoes," then no one would stop speaking . . . a children's party . . . Father Christmas, and a dreadful film which was supposed to amuse the children; it consisted of an interminable series of English cathedrals.

Having scratched the ground at home and sown the seeds of salvation, I returned to the charge. G.H.Q. might assume a passive defensive if they liked—I could not prevent that; but what I could prevent was letting them fall into a profound sleep as regards tanks. The first paper we sent in, this from Uzielli's office, was one on truckage. We asked for 927 tank trucks and 80 ramp



TANKS EN TRAINED FOR CAMBRAI.



CAMBRAI CHRISTMAS CARD, 1917.

trucks, or in round figures a total of 1,000; 500 to be ready by May and 500 by August 1918. Then, on the 29th, a paper on "Training in Co-operation between Infantry and Tanks"; on the 30th a long study on "Anti-Tank Defence," on January 3rd, another long one on "Defensive and Offensive Use of Tanks, 1918," and, on that same day, a short paper on the production of a reliable compass and the use of coloured-light shells.

In the first I pointed out that co-operation between infantry and tanks and knowledge of anti-tank tactics were essential if success was to be based on any sounder foundation than a gamble. I have not space here wherein to summarise its contents, so all I will do is to give the headings of the subjects discussed in it. They were: "Principles of Co-operation," "Doctrine," "Education of Higher Commanders and Staff," "Education of Higher Regimental Officers," "Education of Lower Regimental Officers," "The Training of all Ranks" and "The Education of Infantry School Instructors." This paper ended as follows: "It is considered, if the above suggestions are put into force, that the gap which still separates tank and infantry tactics will be partially closed by a sound and thorough co-operation." Needless to say, it was not closed, for little or no notice was taken of my well-meant suggestions.

As regards anti-tank defence, ever since February 1917 I had, from time to time, turned to that problem, because I felt sure that some day we should be confronted by it, not theoretically, but actually. This study is, I think, worth summarising, because, so far as I am aware, it was the first complete paper ever written on the subject.

It opened by stating that evidence showed the Germans were probably manufacturing tanks, which, as we now know, was correct. Then it went on:

"Even if this evidence be incorrect, it is inconceivable that a nation so intelligent as the Germans or with so efficient a General Staff should fail to grasp:

“ (i) That the application of petrol to land warfare will prove as great a step in tactics as that of steam in naval warfare.

“ (ii) That the characteristics of security, offensive power and mobility, which the tank combines in a higher degree than any single other weapon, are those which are fundamental to success in war.

“ (iii) That the tank enables the main advantages of sea warfare, unrestricted movement, to be to a great extent superimposed on that of land warfare. . . .

“ (iv) That the application of machinery to land warfare is as great a saver of man-power as its application to manufacture. That is: the tank does not create another man-power problem, but is a solution to the existing problem.”

This nearly blew up G.H.Q., and a liaison officer, Captain B. C. T. Paget, in haste, arrived at our Headquarters to remonstrate. He was a brother officer of mine, and we gave him an excellent lunch.

The subject was then divided into five main headings:

“ (1) *The obtaining of early information.*

(i) Information as to production of type.

(ii) Information as to location and assembly.

(iii) Information as to likely lines of approach.

(iv) Information as to approach.

“ (2) *The destruction of the enemy's tanks before or after launching.*

(i) Artillery—stationary defence, mobile defence and bombardments.

(ii) Infantry—snipers, M.G. fire, grenades and mines.

(iii) Tanks—methods of using.

(iv) R.F.C.—low flying and bombing.

“ (3) *The delaying of the enemy tanks after they are launched.*

(i) The utilising of natural obstacles.

(ii) The construction of artificial obstacles:

(a) To prevent a tank spanning an obstacle.

- (b) To prevent a tank surmounting an obstacle.
- (c) To ditch a tank by preventing its tracks from gripping the ground.
- (iii) The reduction of visibility from the tank.
 - (a) Smoke—gun, mortar and bomb.
 - (b) Lachrymatory and gas shells.
 - (c) Bullets to force the driver to close the window.
- “(4) *The breaking up of co-operation between the enemy's tanks and infantry attackers.*
 - (i) Stationary and hidden M.G. and rifle defences.
 - (ii) Sunken wire and flexible wire fences, also concertina wire.
 - (iii) Barrages—M.G. and artillery.
 - (iv) Low flying aeroplane M.G. fire.
 - (v) Depth of entrenched systems.
 - (vi) Formations of our infantry counter-attackers.
- “(5) *The instilling of confidence in our own men so that surprise may be reduced when tanks are used against them.*”

All these points were discussed and explained, and later on, in February, we carried out a series of experiments with land mines, after which I circulated another paper dealing with “Counter Measures against Anti-tank Tactics.”

The paper entitled “Defensive and Offensive Use of Tanks, 1918” was an epilogue or appendix to a G.H.Q. paper—“Memorandum on Defensive Measures”—dated December 14, in which tanks were not even mentioned. It was also written to stimulate some idea of the offensive which, after our repulse at Cambrai, had completely died out of G.H.Q.

In his covering letter Elles pointed out that, on account of the Russian and Italian debacles, every effort should be made to supplement the man-power at our disposal by machine-power, and that a striking force should be built up behind our infantry-artillery shield. To do so, he suggested that the twenty Divisions to be kept out of the lines should be trained to co-operate with tanks and air-

craft, so that "a new method of warfare may be inaugurated against which the enemy is at present impotent." As I will show, had this been taken in hand, there would have been no debacle in March this year.

The study which was forwarded with this letter was divided into three parts: "Introduction," "Tank Defence" and "Tank Offence."

The introduction is of some interest, as it is mainly an appreciation of what I thought the enemy would do. As he possessed the initiative, my opinion was: that the Germans would attempt to end the war before the Americans could take the field in numbers. Consequently, that they were likely to assume the offensive against ourselves and the French, and that their initial attack would probably be aimed at the French front, so that they might first dislocate their stronger antagonist and force us, the weaker, to weaken ourselves by reinforcing our ally. Then, to throw the whole weight of their reserves against our weakened front, with the intention either of penetrating it and winning the war by force of arms, or by occupying a tract of country, such as the Bruay coalfields, which was of such importance that its loss would force a political peace upon France before the Americans could intervene in strength.

I then pointed out that we must turn circumstances to our favour, and should our enemy assume the offensive early this year, that these circumstances were: that his exhaustion would at least be in proportion to our own and that of the French. That we should at no period during this year possess sufficient infantry and guns to defeat decisively the enemy's surplus strength on the conclusion of his initial attack. And that after August we should be able to increase so greatly our infantry and gun strength by a complete change in tactics, due to the introduction of the Mark V tank, that we were likely to be in a position to defeat him and possibly decisively so before the winter set in.

I next turned to tank defence, and pointed out that a passive defence for tanks was an absurdity; in consequence I suggested the following operations: (1) To forestall a hostile attack by a raid; and (2) to counter-attack the enemy during or immediately after his attack. Tanks, I pointed out, enable us, not only to threaten, but to attack the enemy at small cost. A series of periodical tank and infantry raids made at various places would probably force the enemy to retain large forces on our front; further, the prisoners captured would more than compensate for the losses resulting. For a one-day raid with three Divisions, judging from the Cambrai battle, I calculated that our casualties should not exceed 1,500 killed, wounded and missing.

Turning to the tank offensive, I pointed out that we must not copy the Cambrai operation, but instead extend its idea to a battle on a front of 25,000 yards with open flanks; the attack to be carried out with three echelons of tanks: (1) advanced-guard tanks; (2) trench-clearing tanks; and (3) exploiting tanks. Further, that infantry, mainly machine gunners, should be carried forward beyond the 8,000 yards human endurance zone¹ in fighting and carrier tanks; that tanks should be built which could operate at night, and that those operating by day should be equipped with a smoke producer and a smoke projector, mortar tanks being provided for village fighting.

I pointed out that none of these suggestions was impossible by the early autumn, if tank tactics, training and production were energetically taken in hand. That 300 lengthened Mark V tanks were on order, as well as 200 carriers, and that the first would accommodate at least two complete Vickers-gun teams and the second five besides the normal crews. That the lengthened Mark V would be able to move over entrenchments at night-time, and that experiments were about to be carried out with mortar tanks.

¹ The average distance men can march in battle fully equipped.

I next gave a detailed example of such an attack, and wound up by saying: "We must think ahead now in order to take advantage of an arm which at present the enemy is not fully prepared to counter. The eventual counter to the tank as it becomes more reliable and more mobile can, to my mind, only be the tank. We have an opportunity. . . . Once tank meets tank, that opportunity will vanish. The opportunity may be fleeting."

The suggestion to experiment with coloured lights, red, green and white, fired by guns or dropped by aeroplanes, was made so that direction could be maintained by tanks in a night attack. The idea was a common-sense one, but nothing came of it. It was posted and it disappeared.

Having thus bombarded G.H.Q., once again I sought a little fresh air, but this time in an opposite direction, and, unfortunately, I did not find it. On the 16th, taking Hotblack with me, I went on a visit to the French Tank Headquarters at Compiègne, and the following day inspected their machines. I found their heavy tank a kind of kitchen-range on tracks—unblushingly useless, and their small Renault machines were nothing more than cleverly made mountings for Battalion machine guns. The General did not impress me, though I found him to be an amusing little dud. The whole atmosphere of these Headquarters was both refreshing and depressing; it was nothing but cannon and women and women and cannon. Apparently everyone wanted to fill his tank with seventy-fives and his billet with chorus girls. It was indeed very French and all tied up with string.

On the night of the 17th Hotblack and I passed on to Paris, and, the following morning, went to see Sir Henry Wilson at the Trianon Hotel in Versailles. Only once before had I met him, and that was when he gave a lecture at the Third Army School in Auxi-le-Château. He walked up and down the stage of the local assembly room speaking very slowly, when of a sudden, somewhere outside the building, a hen laid an egg and set up a distracting

cackling. Sir Henry was at the moment, in mind of course, somewhere in the Balkans, explaining a mysterious point to his gaping audience. Then he paused, looked up at the ceiling for about ten seconds and slowly exclaimed: "What a topping fowl!"—that brought the house down: he was a born actor.

At Versailles he was British representative on the Supreme War Council, or, as G.H.Q. called it, the Supreme "W.C.," and in order that he might have a free hand he had collected a complaisant Staff. To get rid of it he invented a war game; it was "Allied *v.* Central Powers." Tit-Willow represented one side and Ethelred-the-Unready the other. They took it very seriously, and so allowed him ample time to pull the legs of the "frocks." When I entered the room, he said: "Mr. Fuller, tell me all about tanks." I then told him of our difficulties, and the only criticism he offered was on the liability of tanks being knocked out by gun fire—Flesquières again. I explained to him how this danger could be lessened by low-flying aeroplanes, smoke and night movements, and further, I told him that our real difficulty was not man-power, but brain-power, and that so long as our Generals would think in terms of 1870, there could be no progress.

"1870?" he queried after a long pause, "1870?—they must be very old men."

"Very old," I answered; "from their knowledge of warfare, most of them might have fought at the battle of Hastings."

We got on famously, and during lunch I urged upon him the necessity to form an Allied Tank Committee in order to get a pull over G.H.Q. In principle he agreed with me, and then said: "Come and see me whenever you like." I do not suppose he meant this, but I did not forget it.

On my return from this delightful pantomime, I found that, as the clown in the harlequinade usually plays about with a string of sausages, during my absence, in place of

keeping the Tank Corps more or less concentrated, G.H.Q. had decided to string us out sausage-wise. This was the last order we received from General Kiggell, who immediately afterwards was replaced by General H. A. Lawrence as C.G.S. The letter was dated January 18, and it ordered us to distribute our Four Brigades (since Cambrai a fourth, under Colonel E. B. Hankey, had been raised) as follows: 1st Brigade to First Army; 2nd and 3rd Brigades to Third Army; and 4th Brigade to Fifth Army. Though this facilitated training, all training was to be of a defensive nature, and, considering this unsatisfactory, I wrote out another study entitled, "Tank Operations Decisive and Preparatory, 1918-1919," which Elles forwarded to the new C.G.S. on January 28. This study is summarised as follows:

I began with an examination of the decisive battle, our ultimate object, and I relegated this battle to 1919. I pointed out that several such battles had already been attempted, and that all had been hinged on the possibility of exploitation in the form of pursuit or field warfare, but that how to develop these operations remained a mystery.

I pointed out that with the traditional arms it was useless attempting to penetrate until the enemy's reserves were drawn in, and that as these reserves included his forces holding all parts of his front which were not attacked as well as his general reserve, that is, the troops not occupying this front, the problem was an immense one. First, it meant pinning down his entire front line, some 400 miles in extent, and secondly attacking on at least a quarter of its length; that is, on a frontage of about 100 miles.

As this was not a practical proposition, we should examine the mechanical means at our disposal, and see whether in some form or other the solution could not be rendered practical. These means were:

- (1) Machine guns on human mountings (infantry).
- (2) Machine guns on flying mountings (aircraft).

(3) Machine guns on mechanical mountings (tanks).

(4) Tank traction for guns, ammunition and supplies (artillery).

I calculated that for the holding attack we should require 3,520 tanks, for the decisive attack 5,280 and for the pursuit 1,760. In all, say, 12,000 machines, and that these machines would require 240,000 men—60 per cent. fighting men and 40 per cent. non-fighting. That this total should be provided by ourselves, the French and Americans, our share being 4,000 tanks and 80,000 men. I then went into a detailed examination of these requirements.

This section I concluded as follows:

“ If this war is to be won, we dare no longer seek a solution to the winning of it by thinking in the terms of an inferior weapon. We must think in machine guns . . . infantry, aeroplanes and tanks. The tank will protect the infantry machine gunners from the enemy's machine gunners, and the aeroplane the tank from the enemy's artillery. Here is a solution to our problem, ‘ How to make the most of our man-power in the battles which face us next year.’

“ To continue to think in terms of rifle and cannon, in terms of man-carried weapons and horse-drawn guns in place of mechanically-propelled or carried weapons, is to abrogate common sense. These means have been tried by the Germans, the French and ourselves. They have failed when rifle and cannon armies were at their prime; there is no hope of their succeeding when rifle and cannon armies are in their decadence.”

I then turned to Part II of this study, and pointed out that, until we could launch the decisive attack, all operations should be of a preparatory nature; that is, they should better our strategical and tactical positions, the first including the improvement of our communications, and the second: (1) Reduction of the enemy's strength; (2) economy of our own strength; and (3) the adjustment of our front to meet 1919 requirements.

I next pointed out that when both sides are similarly armed, the attacker sustains the greater loss; but that when the attacker is in possession of a new or improved weapon, it is the defender who loses most. That to fight such battles as the Somme and Passchendaele would not economise our strength; but that operations based on mechanical arms would enable us to be two to one the better of the enemy in all losses and captures.

These operations, I considered, should take the form of tank raids, of which there were two types: a deep raid on a narrow front and a shallow raid on a broad front. With our existing Lower Organisation, for the first we could attack on a front of 20,000 yards and penetrate 10,000 yards, and for the second the figures would respectively be 50,000 yards and 2,500 yards. With the Higher Organisation the frontages of attack would be increased to 30,000 yards and 75,000 yards; the one representing a front from Arras to Armentières and the other from Vimy to St. Quentin. Further, if we captured prisoners on the same scale as we did on the first day of the battle of Cambrai, for a 50,000 yards raid we should take 45,000 prisoners and for a 75,000 yards raid 67,500. Then I wrote:

“ In raids of the above nature, not only would the enemy suffer great losses in personnel (killed and wounded being assumed equal on both sides), but also great losses in time wherein to strengthen his defences, for much of his time would be given up to repairing damage done to his front-line system.

“ The infantry required to support a shallow raid would be drawn from the existing trench garrisons. . . . Whether shallow raids or deep ones are the best form of bettering our tactical position is immaterial. Mechanical warfare does offer a solution and does meet the requirements. . . . If it is not the best solution, then what solution is a better one ? ”

I concluded this study as follows:

“ Beyond the military outlook lie the political and social outlooks, which are beginning to loom big on the tactical horizon. If the politicians and people are to be controlled, so that this war may be brought to a victorious conclusion, we must show ‘ profits ’—a balance of successes—by the autumn of this year. Will ‘ rifle and artillery ’ attacks do this? Will passive defence do this? They will not. If we could not beat the Germans in 1917 with superior numbers, are we likely to do so in 1918 with inferior? Will mechanical warfare do so? It may; its past results are at least sureties for its future behaviour.

“ Unless the mouths of the politicians are gagged by military successes, the outcry now being raised against the Higher Command will grow loud and continuous. Our destiny, as a great nation, lies in the hands of an ignorant and discontented proletariat, which is swayed by words. We must stop these words. How do we intend to do so? This is a problem as important as that of ‘ man-power.’ ”

The new C.G.S. read this paper, or possibly he did not; for, on February 4, it was returned to us without a word of comment. This was a little discouraging; but as, on the 5th, we were to hold a special tank demonstration for G.H.Q. we hoped for the best.

This demonstration was the most fascinating and impressive I have ever witnessed in peace or war, and it was highly dramatic. It consisted of eight star turns.

(1) An exercise with a Company of tanks and a Battalion of infantry demonstrating the Cambrai tactics.

(2) A race between a Mark IV and a Mark V tank over a zigzag course, to show how to avoid direct artillery fire.

(3) A Mark IV cut in half, lengthened and fitted with a 150-h.p. Rolls-Royce engine. This tank carried forward in addition to its crew four machine-gun detachments and crossed a thirteen-foot trench.

(4) A Mark IV fitted with a smoke producer.

(5) A Mark V driven by one man (Mark IV required three).

(6) Three Medium A Tanks moving at nine to ten miles an hour.

(7) A Mark IV mortar tank firing whilst advancing.

(8) Two French Renault tanks skirmishing from shell-hole to shell-hole.

At this demonstration Sir Douglas Haig was present; so also was the C.G.S. and a host of G.H.Q. officers.

That night in our mess everybody, except myself, was enthusiastic, and when someone hinted that I was rather glum, I replied: "This morning reminded me of the heathen gods descending from Olympus to watch the advent of Christianity. What they saw was so vastly superior to anything they could do, that they at once realised there was no place for them in the new order, so they went back to their cloud-home determined to destroy it." And that is exactly what happened.

Three days after this stupendous vision of the future, I visited G.H.Q. and saw Generals Butler and Davidson. The former told me that the Commander-in-Chief had decided to cut down our strength by 8,000 men, that is, from 24,000 to 16,000, and I commented in my diary: "The heathen gods have taken their coats off." The next day Elles went to G.H.Q. and returned somewhat despondent; for all the information he could bring back was, that our two months' hard work on reorganisation was to be wasted, as the Commander-in-Chief was determined to cut down the Tank Corps. The only ray of light was that this day I heard from Charteris that we, the French and the Americans had decided upon creating an Inter-Allied Tank Committee at Versailles, and that the Secretary of State for War had decided that I should be the British representative.

Meanwhile training went on, and I worked out and issued to all our units a new training memorandum entitled "Infantry and Tank Co-operation and Training"—a longish paper of thirty-seven foolscap pages. This done, on the 12th I went over to England to attend a Tank Com-

mittee meeting and to see Mr. Churchill about the G.H.Q. reductions.

On the following day, at Charteris's house, I lunched with him, Mr. Churchill and Mr. Balfour. I had a long conversation on the G.H.Q. reductions, which so annoyed Churchill that he said he would force the hands of the soldiers by swamping France with tanks. He also mentioned, which was new to me at the time, that at the beginning of August the Prime Minister had urged the closing down of the Ypres battle, but that Sir William Robertson had objected. My comment was: "Either he has no tactical knowledge or was completely out of touch with conditions in the salient."

Next the Tank Committee, which ended where it began, that is, in words, and then, on the 16th, back to France, Mr. Churchill travelling by the same boat. On landing at Boulogne, I was met by my car, and when seated inside on the back seat and in its right-hand corner, for some reason which is inexplicable, the thought suddenly flashed through my head: "What would happen if the left-hand rear wheel came off?" I dismissed this absurd idea with an equally absurd one, namely that where I was sitting might help to balance the car a little. We were spinning along at a good pace, when a few miles on the far side of Montreuil there was a lurch and a crash, and through the front window I saw the left-hand rear wheel racing down the road in front of the headlights. I got out and found that no great damage was done, except to the brake casing. The driver recovered the wheel and jacked the car up, whilst I looked for the locking-ring. It could be found nowhere, so I told him that I would stop the first car travelling in our direction, get a lift to Bermicourt or near by, and send out a relief car and another locking-ring. Barely had I said so than in the distance I saw two powerful headlights approaching. I stood in the middle of the road and waved my arms, and the car drew up. Out of it stepped the Duke of Westminster, who told me that he had Mr.

Churchill with him. They were on their way to the Visitors' Château, not far from Bermicourt, so I went along with them. Whilst dining there my car turned up, the driver having in the meantime found the locking-ring. A strange and pleasant mishap.

The next day Mr. Churchill came over to Bermicourt to see us and had a long talk with Elles, and on the following day he returned to London, possibly on account of the Robertson crisis, for this day we heard that Sir Henry Wilson replaced Sir William Robertson as C.I.G.S. Two days later Mr. Churchill was out again, bringing with him the Duke of Westminster to lunch with us. I must say that no single man showed more interest in tanks than did the Minister of Munitions, and, had it been in his power, I feel certain that we should have obtained all we wanted, and that, consequently, scores of thousands of lives would have been saved. After all, the most distressing and the most expensive thing in war is—to get men killed.

On March 2 we attended an extraordinary G.H.Q. Conference at Doullens. Be it remembered that G.H.Q. would not accept our advice and had no single officer on its Staff who had any experience of tanks. Remember also that the tank is pre-eminently an offensive weapon, as offensive as a ship of war. Now, no one would suggest that the best defensive way of employing a cruiser or battleship is to anchor her in harbour; yet this is what Sir Douglas Haig proposed. He informed those present that he had recently paid a visit to General Gough, who was of opinion that tanks should be distributed behind certain parts of our front line as "strong points." In other words, to convert a mobile weapon into a Martello tower! My comment was: "It is like turning a polo pony into a towel horse." Another and slightly less asinine idea was propounded, which became known as "Trap-Door Spider Tactics," or the "Tactics of the Savage Rabbit." It consisted in excavating a series of immense dugouts at intervals along our front, each one to be a lair for a tank.

There this beast would squat and slumber until the enemy advanced, when it would make warlike noises and pounce upon him. As I wrote in my diary: "If these old gentlemen would only come and look at the Mark IV tank, they might understand what 'rot' they propound."

Before this Conference I had issued certain notes upon the agenda, and a few extracts from them will show that there was no excuse for this foolishness. I said:

"Tanks should only be used in tactical situations which allow them to work within their limitations. The guiding principles are:

"(1) Tanks are mobile weapons; their mobility is their greatest asset.

"(2) Tanks are weapons of surprise; consequently their fullest power is developed in unexpected situations.

"(3) Tanks are easily destroyed by gun fire.

"As regards (1), the idea that tanks can be used as pill-boxes or Martello towers is not an intelligent one, although fairly prevalent.

"As regards (2), if tanks are used in a counter-attack, they should be manœuvred against the flanks of the salient formed by the enemy's advance, rather than against the apex. They must, however, be strongly supported by guns and aeroplanes detailed beforehand in accordance with a prearranged plan known to all.

"Whatever operation is undertaken, a leading principle should be: to keep a reserve of tanks in hand. . . .

"As long as an infantry reserve is kept in hand, tanks should also be kept in hand. This applies to all attacks, counter-attacks and local counter-attacks. Without a reserve there can be no staying-power to meet unexpected situations.

"Tanks in such an operation might be employed in two ways:

"(1) To retire before the withdrawal begins and assemble with specially selected troops in rear in order to deliver a prepared counter-attack so as to ease the retire-

ment; or to drive the enemy back from approaching a prepared position and so gain time wherein to organise its defences.

“(2) To act as a rearguard to the retiring infantry. In this case the closest co-operation will have to be established between tanks and field guns, for tanks will have to retire by echelons under cover of artillery fire.

“As regards (1) (taking into consideration the Mark IV tank), this method is probably the best. This machine has not got a large enough circuit of action to enable it to fight a lengthy rearguard battle. The Medium A machine is more suitable for this.

“Whichever of these operations is undertaken, its success will to a great extent depend upon supply. This means a good system of rear dumps. . . .”

Armed with this document, that afternoon I went to G.H.Q. and saw General C. Bonham-Carter, a man whom I greatly respected; but he could do little or nothing to prevent the tactical destruction of the Corps. I also saw an understrapper, an officer who dealt with training and publications—a sardonic creature. For some time now I had urged that my paper on “Infantry and Tank Co-operation and Training,” which we had issued to our own units on January 27, should be printed for circulation down to Battalions. He told me that it could not possibly stand as it was written, and when I asked “Why?” he replied: “It is not written in ‘G.S.’ language.” I must admit that this remark fairly roused me, and I answered: “Our intention is to instruct and not to spend our time producing polished platitudes.” Then he said: “The principles of our training are laid down in *Field Service Regulations*, and these principles are our standard.” I pointed out to him that men fought with weapons and not with principles; that *F.S.R.* was published in 1909; that it was, in fact, obsolete, for it did not mention 50 per cent. of the weapons we were now using. “Obsolete or not,” he replied, “I always follow them.” “You

would," I answered; "you remind me of a certain officer who, when checked for cramming his entire Battalion into Cæsar's camp, replied: 'What was good enough for Julius Cæsar is good enough for me.'" Eventually, in the middle of the March debacle, a gutless edition of my poor notes was published, but too late to be of any use. However, I was thankful for one thing: on its cover was a note stating that it was not to be communicated "either directly or indirectly to the Press."

Two days later Elles went to G.H.Q. to see what could be done about the savage rabbits; he came back with the information that the Commander-in-Chief had decided upon Martello-tower tactics. Next day, on his way to England, he again called in on G.H.Q. and saw General Davidson about raids; for what we still wanted were these offensive tank and infantry operations. We felt that the entire Army was sunk in the mud of a passive defensive, and that unless offensive activities were introduced its *moral* would rapidly deteriorate. That day I relieved my feelings by motoring over to our Depot and giving our reinforcements what I called "a stirring address."

Then the next day Colonel J. G. Dill (G.S.O.1, O.a. G.H.Q.) came over from Montreuil. I knew him well, as we had been students together at the Staff College. He came to discuss raids, and said what a pity it was that we had not already carried out several. I replied: "My dear Dill, we have been pushing that idea for months; what more can we do? The C.-in-C. does not appreciate their value; in place he turns tanks into Martello towers, and then in his dispatches praises the German gunner who is supposed to have knocked out our tanks at Flesquières; what can we do?"

On the 11th I crossed over to England, lectured at Wool on the 12th; lectured at Wareham on the 13th and at Aldershot on the 15th. That day, almost by an act of God, a paper called "Scheme for Battle Liaison," which I had

prepared before leaving, was issued to Brigades by Boyd-Rochfort, and at 2 p.m. on the 17th I left Charing Cross for France. On the train I met Harold B. Hartley, the G.H.Q. gas king. He was somewhat depressed over G.H.Q.'s attitude towards gas. I said: "Cheer up, Hartley—as yours is one of the weapons which can win this war, you must not expect impossibilities."

CHAPTER X

FOLLY'S GRIM DIVIDEND

WHEN I got back to Bermicourt, I was told that G.H.Q. was expecting an attack and could do nothing; for having assumed a passive defence, without any idea of an offensive, either as a distracting or disorganising operation, all that could be done was to wait with our head on the block until the axe fell. Such generalship dumbfounded me. Knowing, as we did, that a great infantry attack depends upon minute and careful preparation, and also knowing that, though the power of such an attack is strictly limited, it can nearly always be depended upon to swamp an opponent's front-line system, it seemed incredible that G.H.Q. had taken no steps either to disorganise the German preparations by tank raids or to thin out our front-line garrisons until they were no more than battle outposts. Had this been done, strong reserves could have been built up in rear, which in turn could have been powerfully supported by tanks had these weapons been kept concentrated in two or three large groups.

In February the whole Corps was distributed in two areas: the 4th Brigade with three Battalions in the Tank Corps' area west of St. Pol, and the 1st, 2nd and 3rd Brigades with nine Battalions in the neighbourhood of Albert and Bray. Had the 4th Brigade been moved forward to Arras, this distribution would tactically have been a sound one. Instead, on account of the savage rabbit craze, by March 19 the entire Corps was strung out in a cordon some sixty miles long; its distribution from right to left being as follows:

4th Tank Brigade, Headquarters, Templeux la Fosse; 1st

Battalion—Doingt Wood (east of Péronne); 4th and 5th Battalions—Buire Wood (east of Péronne).

3rd Tank Brigade, Headquarters, Hénencourt; 3rd and 9th Battalions—Bray; 6th Battalion—Wailly.

5th Tank Brigade, Headquarters, Sautrécourt (Tank Corps' area); 13th Battalion, two Companies Bray, one Company Merlimont (School of Gunnery).

2nd Tank Brigade, Headquarters, Thilloy (south of Bapaume); 8th Battalion Velu Wood (near Havrincourt); 2nd and 10th Battalions Frémicourt (near Bapaume).

1st Tank Brigade, Headquarters, Bois d'Olhain (north-west of Arras); 11th Battalion—Bois des Alleux; 12th Battalion—Bois de Verdrel; 7th Battalion—Boyeffles.

While tactically this distribution made command extremely difficult, administratively it was suicidal; because once tanks were set in movement, with the limited cross-country resources at our disposal it would be impossible to supply them. At this time a heavy tank required five gallons of petrol to every mile it travelled; consequently it was imperative to keep tanks concentrated, if only to refuel them. This essential limitation was pointed out again and again to G.H.Q. and to the Third and Fifth Armies; but apparently no one dreamed of a German break-through, though everyone knew that the Germans intended to attack. In fact, these two Armies and G.H.Q. were living in a fool's paradise of their own making.

What the Fifth Army defence scheme was I did not know; but in the Third Army's it was recognised that in the event of an attack, on account of this difficulty of refuelling, "the tank radius of action from the permanent tankodrome" should not exceed "4,000 yards,"¹ and it was not contemplated "that it would be possible to make use of dumps or supply tanks after the Battalions had left the tankodrome until the action was over." Further, no

¹ This was an under-estimate, because the Mark IV tank had, on one fill of petrol, a circuit of action of fifteen to twenty miles.

scheme was prepared for a rear-guard action, as this Army intended to fight to the last in the battle zone.

On the 18th I corrected a long paper I had been preparing for some time past. It was entitled "Tank Programme, 1919," and was, in fact, a kind of tank encyclopædia covering the whole problem from the tactical, administrative, man-power and production points of view. In the covering letter it was stated that the present personnel authorised numbered 16,400 and though the number of tanks it could man was 600, the number ordered by the War Office up to November 30, this year, was some 3,000. Again it was pointed out that large raids would disorganise the enemy and compel him to break up his concentrations, and once again it was stressed that "there is no other military solution to this war than the exploitation of mechanical means to the fullest," and that "time is the principal factor to contend with," therefore "we must decide early and begin at once."

The next day Elles took this paper to G.H.Q.

On the morning of March 21, the vernal equinox, I motored out to Bois d'Olhain to see Baker-Carr about training. I found him installed in some wooden huts built on a steep slope of ground on the edge of the wood. Then I returned to Bermicourt, to be greeted by the news that the Germans had launched an attack from Monchy-le-Preux, east of Arras, to St. Quentin, or to the River Oise; that is on a frontage of some seventy to eighty miles. I was not in the least surprised, for we knew that an attack was imminent. All we did not know was where exactly it would fall, and at what time and on which day.

Soon telegrams began coming in, and by the evening we had patched together the following information: ¹ Between 4 and 5 a.m. the German Armies, under Generals von Hütier, von Below and von der Marwitz, opened an intense artillery bombardment on the Third and Fifth

¹ All information given is as we received it, and purposely has not been checked or amended with accounts in the Official History and other post-war works.

Army fronts, running from La Fère to Arras. This bombardment lasted about five hours and was followed by a general assault all along the line. The assault succeeded in penetrating the Fifth Army defences south and north of St. Quentin and in driving back that part of the Third Army which was holding the line between Flesquières and Bullecourt. The village of Doignies was captured and counter-attacked by one Company of the 8th Tank Battalion supported by two Battalions of infantry. The tanks made considerable progress and did a certain amount of execution in and beyond the village. The infantry, however, were held up by machine-gun fire after going a short distance. Owing to the late hour of the counter-attack, and the obscurity, the village was eventually lost.

Meanwhile the liaison system, which I have already mentioned, had been set working, and proved so efficient that throughout the next seven chaotic days, so far as I am aware, the Tank Corps, though split up on a sixty-miles front, was the only formation in which its Headquarters never lost touch with its units down to Companies. The irony, however, was: though we knew what was happening, we were unable to make full use of our information, because we had not the means whereby to supply our machines. The insane savage rabbit tactics had gelded us; we were now impotent. However, our liaison was so effective that it may be of some interest to quote an extract from the system adopted:

“ Each Company will send an officer to its Battalion Headquarters every evening . . . these officers will bring with them full information as to the situation on their particular fronts with reference to:

- “ (1) The position of the infantry, so far as it is known.
- “ (2) The position of the tanks.
- “ (3) The state of the tanks.
- “ (4) The state of the personnel.
- “ (5) The day's casualties so far as known.

“ (6) The situation as to (i) supplies; (ii) guns; (iii) ammunition.

“ (7) Condition of the ground.

“ (8) General information as to the day's operations of the Company.

“ (9) Other points desired to be communicated by the Company Commander.

“ (10) Any arrangements made for the following day.

“ The Battalion Commanders will collect the above information from their Companies, and, with any other information they may have received, will each send back an officer with a report to Brigade Headquarters. . . .

“ A Staff Officer from Tank Corps Headquarters will be present at Brigade Headquarters at 10.30 p.m. This officer . . . will collect all information regarding the situation on the Brigade front and . . . will return to Tank Headquarters so as to reach there daily at 1 a.m. . . .”

Such was the gist of this scheme, and it meant that I, as Chief Staff Officer, had most of the day to myself, could set to work at 1 a.m. and get my General's orders into the hands of the Brigadiers by about 3 a.m., and into the hands of Company Commanders by 5 a.m. On these occasions I never issued any kind of formal operation orders, which are suitable only for routine work or examinations; but sent out messages which I dictated to a typist. Needless to say, they were not expressed in “G.S.” language—they were meant to be understood.

On the morning of the 22nd we opened an advanced “G” office at Hamencourt, one mile south-east of Doullens, which next day grew into an Advanced Headquarters. The morning's news was definitely bad: though the Third Army front appeared to be holding, the Fifth Army was reported to be in rout. Having little to do until the night, and all my Staff being on the battlefield, I jotted down in my diary the following remarks :

“ The German success may be attributed to several causes :

“ (1) The wide frontage of their attack: the wider, the less chance of minor checks becoming major delays—voltage.

“ (2) The shortness of their artillery bombardment—five hours.

“ (3) Our cordon system—strong nowhere.

“ (4) The low *moral* of our men—the dividend of the monstrous battle of Ypres.

“ (5) The low standard of military knowledge amongst our regimental officers.

“ (6) The inefficiency of our Corps and Divisional Commanders . . . those who fail, frequently not being got rid of.

“ (7) The inefficiency of G.H.Q. policy; up to December was based on attrition, since then upon passive defence and the cordon system. ‘ Good enough against smugglers ’—Napoleon.

“ (8) The lack of defensive arrangements. Work has been concentrated on wire and trenches instead of on preparing roads for demolitions and instituting a proper system of ‘ battle stops ’ to collect stragglers.

“ (9) There were no definite orders that the first-line system was to be held at all costs. The idea got about that it was permissible to withdraw from it; this started the rot.”

That evening’s reports produced the following picture:

The enemy’s attack had continued along the whole front, and although it was successfully held up by the Third Army, the Fifth Army had been thrown back in disorder.

The 4th and 5th Battalions of the 4th Tank Brigade were moved forward eastwards to engage the enemy on either side of the Cologne River. Tanks already in position about Épehy came into action at Épehy and Villiers-Faucon. A counter-attack at Roisel was most successful, the enemy being twice driven out of that village by tanks, whilst our infantry retired. A similar action appears to have taken place at Hervilly.

On the Third Army front, the 2nd Battalion (thirty tanks) was launched against the enemy in the neighbourhood of Vaulx-Vraucourt, which had been lost by our troops. The Battalion Commander, on his own initiative, put in all his tanks from the neighbourhood of Frémicourt at 4.30 p.m. On his way forward he picked up two Companies of infantry, who co-operated in a most effective manner. This counter-attack, which was met by severe opposition, appears to have been a very gallant and successful enterprise. Tanks penetrated well into the enemy's troops, packed in trenches, and, though suffering heavily, caused very severe losses according to the testimony of a German officer prisoner.

On the morning of the 23rd we heard that the Fifth Army, for all practical purposes, had ceased to exist as a fighting force, and that as the Third had been ordered to conform to its movement, the result was a series of unending withdrawals. At the time my opinion was that the Third Army should have held firm to Monchy, and, pivoting on that village, have slowly refused its right wing. If a gap occurred between its right and the left of the Fifth Army, a counter-attack on the right flank of the enemy could then have been delivered by Divisions drawn from the First Army.

This day I visited the 3rd Brigade and looked up Lieutenant-Colonel C. M. Truman's Battalion—the 6th—which was east of Ficheux. It was a lovely morning and very still and quiet in spite of the fact that the enemy were but two miles away. Elles also went out towards Péronne, and on his return reported disgraceful scenes on the roads, which were thronged with thousands of stragglers. Péronne and Mont St. Quentin had been abandoned, and our troops were in full flight.

The information that night was far from reassuring. Tanks were being lost through lack of petrol. The 5th Battalion had withdrawn south of the River Cologne towards Le Mesnil and thence on Brie. There the bridge

had been prematurely blown up by our sappers, and as petrol had run out, it was not possible to move the tanks northwards and retire by Péronne; the result was that they had to be abandoned.

The 1st and 4th Battalions, fighting a rear-guard action, had retired to the line Mont St. Quentin—Moislains. West of the Tortille River they took up a position running from Cléry northwards to Bouchavesnes, and thence to St. Pierre Vaast Wood; later in the evening they withdrew to Maricourt.

As the chaos of the retirement became more and more profound, the less had I to do, and so, on the 24th, taking Hotblack with me, we motored to Proyart to look up Hankey, who was in command of the 4th Tank Brigade. From there we went on to Maricourt, where I found General Sir David Campbell and the Headquarters of the 21st Division, and with him his G.S.O.1—Alan Paley. Continuing along the Maricourt—Hem road, we stopped the car by a first-aid post at which had collected a number of badly wounded men. There we told the driver to evacuate as many as he could by taking them back to Maricourt, whilst we walked on towards Hem, passing an abandoned tank on the road. Next we were fired at by a German aeroplane, flying very low, and a little later on met a wounded soldier, who told us Hem was occupied by our troops. Soon after we met another, who said that it was full of Germans. Considering discretion the better part of valour, we cut across country northwards towards Maurepas; came under some distant machine-gun fire, and then at some dugouts scooped out of a bank ran into General Marindin and two other Brigadiers. They could tell us nothing except that their immediate commands had shrunk to a few signallers and some batmen.

On our way back we met eight tanks of the 1st Battalion which were moving up to support the infantry, but where they were the officer in command did not know, nor did we. Next we encountered the leading Battalions of

the 35th Division, which, I believe, had come from the Ypres area. The men were so done up that they took no notice of a German field gun some 3,000 yards away and on the sky-line until over open sights it began to fire.

Picking up the car, we returned via Corbie, where I called in on General W. N. Congreve, the VIIth Corps Commander. I told him what we had and had not seen; whereupon he instructed his B.G.G.S. to issue certain orders. I said to him: "General, if I were you, I do not think I would send those orders out, because the situation has changed at least half a dozen times since I left." The truth is, that with no proper system of liaison and Headquarters miles behind the front, orders were constantly being issued which bore no relationship to the situation as it was or could be on their receipt. Our front was not only being pushed back, but dragged back by impossible instructions. At the time I noted: "Troops fall back and dig, fall back and dig, and so on until they are completely demoralised; when 'fed up' they walk away from the enemy without firing a shot." Then I wrote: "To stop the present rot, which has now seized upon the Third and Fifth Armies, three courses can be adopted: (1) Order an advance of the whole British line. (2) Order Corps Headquarters to remain where they are and not move back a yard. If they do not move, they will see that their troops in front of them stick it out. At present the impetus to withdraw is created by the Corps Headquarters withdrawing. It is a matter of 'follow my leader' executed backwards. (3) Bring up reserves on a line ten miles or so in rear of the battle front, hold it and let all fugitives pass through and bivouac them on the other side of it."

That night I found our tank situation was as follows: The front line of the Third and Fifth Armies was reported to extend along the western bank of the Somme Canal to Cléry, thence via Bouchavesnes to Bertincourt, and then to Mory and to the River Scarpe about Feuchy. On the Fifth Army front, the 5th Battalion, having lost all its tanks,

was formed into a Battalion of forty-five Lewis-gun Groups and was throughout the day in continuous action. Tanks of the 1st Battalion came into action between Maricourt and Hem, and as, on the evening of this day, the 4th Battalion was reduced to four tanks, it also was organised into Lewis-gun Groups and was ordered to hold the village of Maricourt in conjunction with elements of the 35th Division and of a Cavalry Division. Meanwhile the 8th Battalion, without any supporting infantry, fought a rear-guard action between Barastre and Lesbœufs, its few surviving tanks fighting their way back towards Bazentin-le-Petit.

On this information I at once issued a revised edition of our Lewis-gun Battalion Organisation, and sent orders to the 4th Brigade to hold with Lewis-gun posts the line Hem-Maricourt, and to the 3rd Brigade to carry this line on from Maricourt through Montauban and Contalmaison to Martinpuich.

The next day, the 25th, I motored out to Albert. Leaving my car in that town, from it I walked in to Fricourt, some two and a half miles to the east, in order to see how the Lewis-gun Groups were faring. As I approached the few remaining ruins of that village, I came under a certain amount of persistent shell fire, yet it was nothing exceptional. At first I could not find the Lewis-gun Battalion Commander, who had taken shelter. When I did I found that next to nothing had been done to organise the defences of Mametz and Contalmaison. This I put right, and as I was speaking to him a scout came in and reported Montauban in the hands of the enemy. A moment later Martel hove in sight and told me that he was on his way to that village. I informed him of what the scout had reported, and in reply he exclaimed: "I will go and see." So on he walked, and that evening he told me that he had entered the village and had found our men comfortably installed in it.

The truth is that, on account of lack of command, our

moral was going to pieces. There was no one in authority; consequently the men lost heart. Then the command got jumpy, and the men lost more heart, and so on—it was a vicious circle. On this part of the front there was little hostile pressure; in fact, the Germans had outrun their supplies, with the result that their attack was fast petering out. Nevertheless, the excellent defensive ground which we held was given up and a further withdrawal westwards of some four miles was ordered. When I heard this, I really thought that our Higher Command had been stricken mad. I jotted down in my diary: “Every opinion and observation convinces me more and more that panic is caused by (a) want of command, and (b) the perpetual shifting of Headquarters. Who is fighting this battle? No one! G.H.Q. and the Armies know next to nothing about what is happening. Each Brigade and each Battalion is attempting to carry out a dozen orders and counter-orders at one and the same time. As the Corps move their Headquarters back, the Divisions follow suit; then the fighting troops follow the Divisions, and position after position is abandoned.”

I had a talk to Elles on this question, pointing out that either the Army and Corps Headquarters should be ordered to advance or at least remain where they were, otherwise they would drag us into the sea. If I remember rightly, he went forthwith to G.H.Q.; anyhow, what happened was: the Third Army received orders to occupy, approximately, our Somme front line and the line of the Ancre, namely Bray-sur-Somme—Albert—Beaumont—Hamel—Gommecourt—Arras, and stop there. This order, as far as I am aware, was the first “interference” on the part of G.H.Q. in this battle; thus far nothing had been done outside issuing orders “to rectify the line,” which were the principal cause of our distress.

In the evening I attended a Conference at Third Army Headquarters, at which was discussed a proposal to pivot the left of the Third Army on Arras, and swing its front

back on to the line of the Arras–Doullens road; let the enemy south of it through, and then counter-attack him from the north. It was a bold idea; but nothing came of it, because the German advance was rapidly reaching the limit of its radius of supply—it could no longer be fed.

As the reports for the 25th came in, it was apparent that our command had now ceased to function. The enemy forced the crossing of the Somme and advanced on the line Estrées–Herbécourt and also towards Maricourt–Montauban–Irles–Achiet-le-Grand. The 1st Battalion attacked with tanks south of Maricourt and assisted in repulsing four attacks on Montauban. The 10th Battalion fought a successful rear-guard action in the neighbourhood of Achiet-le-Grand, and in the vicinity of Grévillers and Sapignies several tanks succeeded in getting into a mass of German infantry; but the result was a loss of ten machines.

The 26th saw confusion worse confounded. The VIIth Corps Headquarters retired some eleven miles! Northwards, at Souastre, Martel found complete confusion; the roads were blocked by vehicles of every description, and many officers he met were circulating wild rumours that the enemy were advancing on that village. Apparently what had happened was this: on the 24th a number of the new Medium A tanks had been issued to the 3rd Brigade, and, moving forward on the 26th, they had been mistaken for German machines. This caused a panic, the front south of Hébuterne being thrown into complete confusion.

From the reports I pieced together the following picture: Our line had now been withdrawn roughly to Rosières–Proyart – Bray – Albert – Beaumont – Hamel – Puisieux – Ablainzeville. South of the Somme, the 5th Battalion was operating with Lewis-gun Groups, and north of it the 1st Battalion had fought a tank action about Bray Wood. In the early afternoon the Medium tanks of the 3rd Brigade had been ordered to move from the neighbourhood of

Bray northwards towards Colincamps, and near Serre they had dispersed several large bodies of the enemy. This action was most opportune as it frustrated a hostile turning movement south of Hébuterne. The 10th Battalion had also fought a small action.

On the morning of the 27th the position of units was as follows: 2nd Tank Brigade—Acheux; 2nd Battalion—Marieux; 8th Battalion—Acheux; and 10th Battalion—Souastre. 3rd Tank Brigade—Toutencourt; 3rd Battalion—Varennes; 6th Battalion—La Cauchie; and 9th Battalion—Contay. 4th Tank Brigade—Montigny; 1st Battalion—Franvillers; 4th Battalion—Franvillers; and 5th Battalion—Boves. The Lewis-gun Groups were mostly still in the line. Of Mark IV tanks we had lost about 120, many from lack of petrol; that is, 60 per cent. of those of the Battalions engaged.

On the following day I went out to La Cauchie to see the 6th Battalion, and then on to Adinfer Wood, where I watched some twenty to thirty Germans trickle into Ayette. There was nothing to stop them; yet half a dozen riflemen would have kept them off.

It was on this day that a most extraordinary event occurred, which might well have led to a major disaster. Somewhere near the village of Colincamps an agricultural officer went forward to retrieve three steam ploughs. On his return with them, as he topped a rise, some of our men, seeing them, bolted back shouting, "German tanks!" The result was instantaneous panic; several thousand men abandoned their positions and fled westwards. The strange thing is how this panic grew and grew. Doullens was thrown into a state of wild excitement. At Marieux the IVth Corps Commander completely lost his head, for he ordered up eight tanks and several field guns to defend his Headquarters. At Auxi-le-Château the Staff of the Third Army School was turned out and ordered forward on bicycles as a forlorn hope, and panic actually descended upon Boulogne. Meanwhile we, who were still at Hamen-

court, received the most amazing instructions. We were told to send tanks up the Doullens—St. Pol road and blow them up and so block that road directly enemy armoured cars were reported approaching it. We were ordered at once to reconnoitre the old Vauban fortress at Doullens and to be prepared to assist in holding it to the last man and the last round. Actually Martel was sent on this reconnaissance, and he made a full report on its defensive possibilities. From one angle the whole of this ridiculous episode was disgraceful in the extreme; from another it was the logical outcome of loss of command and the confusion resulting from it. Actually this panic did not die out until the end of the month; for, on the 31st, in the First Army, rumours of German armoured cars were still prevalent, and we were ordered to move more tanks out to block the roads.

By April 2, as far so we in the Tank Corps were concerned, the Second Battle of the Somme had come to an end, so I set to to digest its lessons.

My three G.S.O.2's, Martel, Hotblack and Boyd-Rochfort, had, since the battle was launched, been daily on the battlefield, and I also had seen a good deal of what had taken place. Consequently, as this battle is likely to be discussed for many years to come, I think it may be of some interest if I set down here what my subordinates and I thought. First, I will extract a few of their opinions drawn from a mass of notes submitted to me at the time.

“ As soon as the battle had started, all Headquarters (including Corps and Divisional) should have sent back all their non-fighting Staff and all baggage. Then they should have fought the battle in the field with telegraph pads. Instead of this, many Corps and Divisional Headquarters were constantly on the move, blocking the traffic, and were quite out of touch with the situation.”

“ General Staff Officers from Divisions should have been constantly up the line to see that touch was kept between

Brigades; similarly G.S.O.'s from Corps should have kept touch between Divisions. In practice, few Staff Officers were seen near the front, and Corps and Divisions were often issuing orders on a situation which had long since passed."

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"Rear-guard actions were seldom fought. The troops either held out until killed or captured or withdrew without firing at the enemy. After the first day the troops in most cases believed that it was their rôle to withdraw without fighting. . . ."

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"Little was done to impede the enemy, few roads were blown and bridges were so little damaged that our men crossed the Somme on foot *after* the bridges were blown."

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"Headquarters of Formations seldom sent forward Staff Officers to gain information. In many cases withdrawals were ordered on rumour. Any officer in a car or on a motor-cycle could have found these rumours to be untrue. . . . Weak enemy patrols far ahead of the main body were frequently reported as heavy attacks. Junior Staff Officers of Divisions should use motor-cycles in battle; cars are not available in sufficient numbers, and are liable to get held up in congested traffic."

My own report was headed "The Basic Causes of the Present Defeat." It was of a more general character, and I made it out at the request of a senior G.H.Q. Staff Officer. The more important sections read as follows:

"The present failure . . . is undoubtedly due to deeper causes than faulty tactical handling in the battle itself. The chief of these causes are:

"(1) Lack of Strategical Policy.

“(2) Incapacity of the Higher Command.

“(3) Loss of *Moral* amongst the Fighting Troops.

“(4) Adoption of the Passive Defence.

“(1) *Lack of Strategical Policy*.—Instead of saving our man-power in 1917, when it became apparent that Russia was going out of the war, we squandered it. In September 1917 we were told that one or two more determined attacks eastward of Ypres (on a frontage of 20,000 yards) might end the war! In January 1918 we were told that we must be prepared to be attacked at any moment by 100 German Divisions! Why this *volte-face*? Was it because there was no definite policy as to how the war was to be won? This is what many of the lower Commanders feel, and the result has been loss of confidence—they and their men are mere cannon-fodder; this does not encourage them.

“(2) *Incapacity of the Higher Command*.—Presumably victory is our object. This war is a business proposition; it therefore requires ability. Nevertheless, our Army is crawling with ‘duds’; though habitual offenders, they are tolerated because of the camaraderie of the old Regular Army: an Army so small as to permit of all its higher members being personal friends. Good-fellowship ranks with us above efficiency; the result is a military trade union which does not declare a dividend.

“We see the same process going on in the General Staff. Here we get the ‘Three-letter clique’; P.S.C. [Passed Staff College] does not necessarily turn a ‘sow’s ear into a silk purse.’ Nevertheless, it would appear that some General Staff Officers are chosen for their appointments, rather on account of these three letters than because of their proved ability. Results and not diplomas are the true tests of efficiency.

“(3) *Loss of Moral amongst the Fighting Troops*.—There has been a steady decline in *moral* ever since August last. Ypres iii [Passchendaele] was the grave of the old voluntary army. The conscripts we now get are drawn from the classes who kept out of the war as long as they could. Partially trained in England, their military education has never been completed. Digging and

wiring rather than careful training have been the occupation of many of them since the beginning of the year. A proportion of the men are fed up, they are afraid of the enemy; in other words, they acknowledge his superiority as a fighter.

“*Esprit de corps* is not fostered. If a man goes sick, on his return to duty he may or may not return to his Regiment—one day he is an Irish Fusilier, a month later a Yorkshire Light Infantryman, and, should he go sick again, he may eventually find himself a Gordon Highlander.

“If we cannot rehabilitate the old *esprit de corps* in our Army, then we must select units and form them into a *corps d'élite*. We should do this straight away with the M.G. Corps, by giving it a real chief. Its *moral* at present is indifferent.

“(4) *Adoption of the Passive Defence*.—Napoleon anathematised the ‘cordon system’ as ‘good enough against smugglers.’ We adopted it—reserves, guns, tanks, etc., are placed in little packets all down the front.

“Our defences are purely linear, of little depth. Compare the German active defence of 1917 (the withdrawal to the Hindenburg line) to our Zone System. They turned conditions to their advantage, we ignore them altogether. Instead of digging ‘battle zones,’ had we dug a Hindenburg line on the western edge of the Somme battlefield, we could have retired to this, leaving a devastated area between us and the enemy, which would have delayed him for weeks. Lack of men has been a difficulty, but lack of brains has all but landed us in a disaster of the first magnitude.”

On the evening of April 2, the day upon which this report was written, Uzielli happened to be at the Doullens level-crossing, when along came Mr. Churchill in a car. He went up and spoke to him and brought him in to dine with us. Elles explained to him very frankly the causes of our failure, and so did I. Well do I remember him quoting Clemenceau's words of March 25:

“ We will fight before Amiens and in Amiens.
 We will fight if necessary behind Amiens.
 We will fight before Paris, and we will fight in the streets
 of Paris.
 We will fight if need be upon the sea-shore.”

I am afraid I rather spoilt this peroration by exclaiming:
 “ Well, our Generals will get us to the sea-shore all right;
 have no doubts as to that.”

On the 5th I crossed over to England, saw General Capper, and then, on the following day, remembering that last time I had met Sir Henry Wilson he had said, “ Come and see me when you like,” I went over to the War Office and cashed in on his account. From Capper he had received a copy of my “ Basic Causes,” and I was not in his room more than a minute when he exclaimed: “ Mr. Fuller, you say that the Army is crawling with duds. Do you mean like vermin ? ” To which I replied: “ If I may say so, General, that is a very picturesque way of describing the situation, and to it I would like to add this: When they bite us, instead of using Keatings, we sprinkle decorations upon these people.”

We talked for about half an hour, after which I returned to France.

Then, whilst we were still in the middle of refitting, another catastrophe smote us: on the 9th the Germans attacked between Festubert and Fleurbaix, and the Portuguese fell back towards Boulogne. By the 11th a bulging salient had been driven into our front from Ploegstreet-Steenwerck-Estaires-Lestrem-Vieille Chapelle, through Festubert to Givenchy, with its apex east of Merville. At the height of the rout, Elles, accompanied by his A.D.C., Captain Ian M. Stewart, went forward to see what was taking place, and both got involved in an infantry counter-attack, which I for one was not at all surprised to hear.

In order to meet this new situation, detachments of the

7th and 11th Battalions of the 1st Tank Brigade were sent to hold the line west of Merville, and, on the 12th, the 4th Tank Brigade, consisting of the 4th, 5th and 13th Battalions, was converted into a Lewis-gun Brigade, and followed by other units was sent north. On the 17th our general distribution was as follows:

1st Tank Brigade—H.Q. Bois d'Olhain: 11th Battalion—north-east of Busnes; 7th Battalion—Molinghem; and 12th Battalion—Simencourt.

2nd Tank Brigade—H.Q. Saulty: 6th Battalion—Bailleulval; 10th Battalion—La Cauchie.

3rd Tank Brigade—H.Q. Molliens-au-Bois: 3rd Battalion—Toutencourt; 9th Battalion—Merlimont; 1st Battalion—Fréchencourt.

4th Tank Brigade—H.Q. Godewaersvelde: 4th Battalion—Boeschepe; 5th Battalion—Berthen; and 13th Battalion—Boeschepe.

5th Tank Brigade—H.Q. Monchy Cayeux: 2nd Battalion—Blangy; 8th Battalion—Humières.

The fighting was severe, but what concerned us most were the casualties among our Lewis-gun units; because reinforcements from home had been stopped, and trained drivers could not be replaced.

When this battle, called the battle of the Lys, was first launched, the usual wind began to blow. By now we had built acres and acres of workshops at Erin,¹ and to our consternation with this wind came orders to demolish them within twenty-four hours of the word "go." A plan was worked out by Searle, whilst thousands of refugees poured into our area from the north, to be most generously entertained by our men, who, on their account, went short of rations for several days. Meanwhile I had to get down to a new organisation, the formation of a "Provisional Workshop Lewis-gun Battalion." It consisted of two Companies, each of four Sections of two Lewis-gun Groups apiece. An establishment was hastily worked

¹ A little north of Bermicourt.

out for it as well as a tactical note of a peculiar kind, namely for men who were not in any way trained, for in actual fact they were not soldiers at all. This note, a short one, for otherwise no one would have read it, was written in anything but "G.S." language, because I wanted the men to understand it, and quickly. It dealt with: "The Man," "The Weapon," "The Ground," "Movement," "Co-operation" and "Fighting," this last paragraph reading:

"The object of fighting is to kill without getting killed. Don't disperse your force; you can't punch with an open hand; clench your fist; keep your command together.

"Fight when holding, advancing or retiring: always fight or be ready to fight.

"Aim at surprise; see without being seen. If you meet a man in a dark room, you jump; you should always try to make your enemy jump, either by day or night. A jumping man can't hit.

"Never remain halted without a look-out. Sentries must be posted, no matter what troops are supposed to be in front of you.

"Guard your flanks and keep touch with neighbouring units. Try to get at the enemy's flanks.

"Send information back to your immediate Commander. Negative information is as important as positive. State time and place in your message. You cannot expect assistance from your superiors unless you tell them where you are and how you are situated.

"Hold what you have got and what you gain. Never withdraw from a position until ordered to do so.

"WHEN IN DOUBT, FIGHT IT OUT."

However, the attack petered out when, on the 24th, the next "alarum" was sounded.

South of the Somme the German March offensive had died away a few miles east of Amiens, the line running from

immediately east of Villers-Bretonneux southwards to the village of Hangard. About half-way between these two places and a mile and a half west of this line lay the village of Cachy, and some ten miles north of Villers-Bretonneux lay the village of Hénencourt, to which the 3rd Light Tank Battalion moved on the 18th, and, on the next day, a Company, known as X, was formed. It consisted of two Sections, one of four Medium A tanks and the other of three. At 2 a.m. on the 21st it moved to the Bois de Blangy, three miles west of Villers-Bretonneux, and there went into bivouac.

On the morning of the 24th I was in my office at Bermicourt, when the telephone rang and I received the information that the Germans had launched a heavy attack on Villers-Bretonneux, had used tanks and had driven our troops back. This was perturbing news, because, if Amiens fell, the only railway left between the British and French Armies was the one passing through Abbeville, and Abbeville was but twelve miles from the coast. No more was heard of this attack until the afternoon, when the following telegram was received from the 3rd Tank Brigade: "Situation X Coy. 3rd Battalion attacked 2 Battns. enemy infy., massing E. of Cachy at about 11 a.m. and scattered them inflicting heavy loss. Enemy employed 4 large tanks carrying 3 2-pdr. guns each which knocked out 2 female Mk. IV British tanks. 4 Whippets [Medium A's] lost in this morning's operation, 3 returned. Casualties light."

Concerning these two events—the German tank attack and the Whippet attack—I will first describe the former. What happened was this:

At 8.30 a.m. on the 24th, the G.O.C. 23rd Infantry Brigade ordered forward a Section of the 1st Tank Battalion, and about an hour later its leading machines encountered an enemy tank of peculiar shape, which put two of our machines, both females, out of action. Then a male tank of the Section, commanded by 2nd Lieutenant F.

Mitchell, brought his 6-pounders to bear, and at 10.15 a.m. the enemy machine was put out of action. Unfortunately, at about noon, Mitchell's tank received a direct hit, and he was compelled to evacuate it. Such in a few words is the description of the first tank-*versus*-tank action ever fought. It was a noteworthy event, and in its way as notable as the duel between the *Merrimac* and the *Monitor* on March 9, 1862.

Though these German tanks were seen by hundreds of men, the reports we received were remarkably contradictory. Eventually from a prisoner we learned that seven had been in action, co-operating with the German 4th Guards Division. According to this man, when Hindenburg first saw them, he said: "I do not like their look, but now that you have made them you may as well use them," which was very much what Lord Kitchener said when he first saw our original Mark I tank. One of these monsters, for they weighed forty-five tons, whilst retiring ran into a sand-pit and turned over on her side. She was named the "Elfrieda," and in spite of this pit lying in No-man's-land, Elles, accompanied by the Brigade Major of the 3rd Tank Brigade and a tank Engineer Officer, sallied out in broad daylight to examine her. All went well on the outward journey; but shortly after they began to return, all went wrong, for some German riflemen had meanwhile crept up to a small rise, from which they commanded Elles's line of retreat. "Zip" went a bullet, and "zip, zip, zip" went several others. Whereupon Elles and his companions had no option but to run for it. That no one was hit was all but a miracle; somehow or another they got back safely, and that night there was a good deal of merriment at their expense.

As regards the second episode, that of the seven tanks of the 3rd Tank Brigade, their adventure was more remarkable still. At 10.20 a.m. they were ordered forward to clear up the situation east of the village of Cachy. Each machine was manned by one officer and two other ranks—

a gunner and a driver—twenty-one officers and men in all. They debouched from the north of the village and made for a spur which juts out east of it towards Hangard Wood. On reaching it, they found it strongly occupied by light machine-gun groups in shell-holes, whilst farther down the slope a force, estimated at four Battalions of Germans, was seen forming up in the open. Such an opportunity seldom presents itself in war, and down rushed the seven tanks at top speed: twenty-one men behind armour against four Battalions in woollen jackets. In man-power the odds against them were overwhelming, probably 75 to 1; but in machine-power these odds must be reversed, for the Germans had not a chance to escape. Before they could scatter, the machines were among them. Some 400 were killed and wounded, and when the slaughtering, for it was nothing else, was over, the seven Whippets cruised about until our infantry had consolidated the position, and it was during this covering operation that four were hit by shell fire, one being badly damaged and three slightly.

In looking back over this period of despondency and of passive defence, the part played by our tanks is an instructive one. In February we were well placed to meet any attack south of Arras; in March, on account of the insane savage-rabbit idea, we were tactically emasculated. Then, in April, by a mere chance accident of war, seven machines, manned by twenty-one men, threw into panic two German Regiments and killed and wounded at least 400 men. I say "at least," because the highest figure reported was 1,000, and it is generally safe to halve such calculations. If this was not a justification and a vindication of our tank-raid proposals, nothing could be; consequently, in my own mind there was no doubt that whatever shortage of man-power existed after the slaughterings of Passchendaele, in January and February we had sufficient tanks in France to have carried out at least two raids of 200 machines each. Nor is there any reason to doubt that, had these raids been carried out, the great German attack on March 21 would

either not have taken place or would have been delayed for weeks. This is the lesson the seven tanks at Cachy should have taught our Higher Command; yet, strange to say, at the very time when these machines were moving forward, we, at Tank Corps Headquarters, were fighting quite another kind of battle, a battle which I will now describe.

CHAPTER XI

THE DECISIVE BATTLES

THE Second Battle of the Somme, the Battle of the Lys and the third Battle of the Aisne, the last fought between May 27 and June 2, were the direct and indirect dividends the Allied Powers were paid on their investments of death and destruction, which, during the summer and autumn of 1917, they had sunk in the swamps of Ypres. That they could have been mitigated or even avoided altogether is probable, had G.H.Q. concentrated upon machine-power and ceased to think in terms of man-power; that is—upon the power of machine weapons and not upon the number of individual weapon-wielders. Though this was not done, it nevertheless remained the one and only solution—there could be no other. But so obtuse was the outlook of G.H.Q. that not a glimmer of this vision of victory lit their understanding. They had plunged into the swamps of Ypres; they had recoiled over the firm ground of the Somme; they had seen tanks swallowed in the mud and had watched them abandoned on the downlands. They could see disaster only, and never the road to success, consequently, their back was turned upon victory and their eyes were shut tight against the causes which had ruined their Spartan tactics.

Having suffered the greatest single defeat in our history, what did the leader of our armies do? Three days after the battle of the Lys was launched, Sir Douglas Haig, as I have already mentioned, decided that one complete Tank Brigade should be converted into a Lewis-gun Formation. At the moment we did not realise that this was the first step in an attempt drastically to reduce the Tank Corps, if not to abolish it altogether. Then the next day all

became clear, for we received an order that the Tank Corps in France was to be cut down from five to four Brigades; which apparently meant that the thirteen Battalions we then had, and the total of eighteen as budgeted for, were to be reduced to twelve. Of our personnel in France, 2,647 officers and other ranks were to be placed at the disposal of the Adjutant-General for infantry reinforcements. Frankly, we were staggered, not at the decision only, which was suicidal, but at the figures quoted; for their details bore no relationship to our existing strengths. Actually they had been taken from establishments which had never matured, and as I noted in my diary: "We are now asked to give back what we have never received; in other words, to produce men out of ciphers—this is more than Jason could do."

The next day Uzielli visited G.H.Q. and went straight to General Wigram's office. There one of his subordinates acknowledged that the figures were merely figures; in fact, Uzielli said: "The whole of them, like a bundle of rouble notes, was no more than a valueless paper transaction."

G.H.Q. was adamant; nevertheless, I determined to pit my insignificant powers against this distracted Colossus. Then and there I made up my mind that the only course open to us was to play for time, and the classical way of playing this game was to become bureaucratic. So we severed all personal contact with G.H.Q. and opened an involved and equivocal correspondence. Elles ceased to visit Montreuil, and a paper battle was launched on establishments—the surest way of stone-walling the birth, growth or change of any military organisation. By the 20th we were so successful that we were asked whether, in view of the decision that the Tank Corps was to be reduced to four Brigades, "Will the present establishment not suffice, allowing 1 Sergeant to each Brigade and 2 to the Reinforcement Depot?" Here was a really important argument, embracing some half a dozen Sergeants, which might last six weeks, and every day's delay was vital to us.

Then, on the 24th, as I have already described, came the first tank-*versus*-tank fight and the Cachy incident, and though we realised that these dramatic events would have no influence whatsoever upon a man of Haig's mentality, we knew they would provide ammunition for our friends at home.

By now Mark V tanks in numbers were being delivered in England; but—and I will refer to this later on—G.H.Q. had stopped their importation into France. Nevertheless, on the 27th, ignoring the reduction, now completely entangled in the meshes of the establishments net, a letter was sent to G.H.Q. asking for a delivery of forty-eight machines weekly. Then, on the 29th, Mr. Churchill most opportunely visited us, and we did not mince matters with him. He told us that an Inter-Allied Tank Factory was being erected at Châteauroux, and that from it tanks were to be distributed to the Allies as directed by the Inter-Allied Council of Versailles. Also that General Foch, who during the March disaster had become Generalissimo, and General Pétain, Commander-in-Chief of the French armies, were in complete agreement with the scheme, and that, in their view, tanks were infantry savers and, consequently, it was essential that large numbers should be built. This was encouraging, and especially so to me, as I had been appointed a member of the Inter-Allied Tank Committee, and would, therefore, be in a position to influence its recommendations.

Thus we survived April; now we had to survive May.

On the 1st of that month I read in the "Daily Review of the Foreign Press" (a paper issued by the War Office General Staff) an article written by a Captain Nørregaard in the Norwegian *Morgenblatt*. It struck me as being so true and yet such an extraordinary thing to find in a General Staff publication, that I copied part of it into my diary, namely: "Haig's strategy belongs to the Stone Age. . . . Haig hammers away at the same place and never sought to flurry or disarrange his enemy's plans;

the German strategy breaks through, goes as far as possible, and then strikes a lightning blow in another direction. . . . We think it is fortunate that under these circumstances Foch has the decision." So did I, though no ardent worshipper of Foch. Below it I wrote: "To guess at the intention of the enemy; to divine his opinion of yourself; to hide from him both your intentions and opinion; to mislead him by feigned manoeuvres; to invoke ruses, as well as digested schemes, so as to fight under the best conditions—this is and always was the art of war." —*Napoleon.*

That the Norwegian Captain was fully justified in his remarks the next morning revealed; for then we received a copy of an extraordinary letter, dated April 30, 1918, and signed by Sir Douglas Haig himself, the original of which had been addressed to the Secretary, War Office. In it he explained that, in order to ensure the employment to the best advantage of all available trained personnel, arrangements had been made to form temporarily a Brigade of three Lewis-gun Battalions out of the existing Tank Corps units in France, and, "in view of the shortage of infantry in France," to reduce the establishment of the Tank Corps by "one Brigade and three Battalions," together with the authorised ancillary services, namely one Brigade Signal Company, one Supply Company, one Advanced Workshop, one Brigade M.T. Company and one Depot Company. This letter went on to say that the Tank Corps in France would then consist of four Brigades of twelve Battalions—an absurdity; because at the time we had thirteen Battalions in France, of which ten were equipped with tanks and three with Lewis guns. Therefore, if the reduction was, as stated, to be "by one Brigade *and* three Battalions," which could mean nothing else than six Battalions in all, then the number of Battalions (equipped with tanks) left over would be four.

Whether this was an intentional or unintentional "error" I do not know. Meanwhile another blow fell upon us.

I had already heard rumours that G.H.Q. did not consider that I was the right person to represent the War Office on the Inter-Allied Tank Committee, the first session of which was to be held on May 6 and 7. Then, on the 3rd, I was suddenly informed, so suddenly that no appeal against it could be made, that I was relieved of this appointment and that General Capper would take my place. In a way I was not sorry, for I could not be in two places at once, and however important the Versailles Committee might be, my proper place was in our front line facing G.H.Q.; besides, General Capper was in every way competent to deal with our Allies, and he arrived at Bermicourt on the 4th.

Once there, I handed over to him the draft agenda I had received, with my notes on it; to the agenda I had added two additional items:

“ 12. The amalgamation of the British and American Tank Corps, so that a combined Anglo-American Corps may be formed. The personnel to be found mainly by America and the machines by England. . . .”

“ 13. The formation of a Sub-Committee to deal with the countering of anti-tank defences.”

The first was added in order to get tanks out of the hands of G.H.Q.—I had had enough of that lamasery.

Meanwhile Mr. Churchill had been busy at home. Mark V tanks were being rapidly delivered from the workshops, yet we could not get them to France because of the G.H.Q. embargo. The reason for this was “priority of transportation,” a fictitious excuse, because tanks came from Richborough in special barges, and though, of course, these barges could be used for other supplies, to divert supplies from their normal ports of loading, such as Avonmouth, to Richborough would not have helped much. So it happened that, on May 4, we got a strange letter from the C.G.S. pointing out that as the supply of Mark V tanks was greater than the personnel available,

it was proposed to give Mark V's to the French in exchange for Renault machines.

As we had not sufficient men to man Mark V's, how were we going to man Renaults in their place? And even if we had performed such a miracle, this machine was vastly inferior to the Mark V; besides, our men were not trained to drive it or use its weapons; it in no way fitted our tactics, and we should never have been able to maintain these tanks in the field, if only for lack of spare parts. As the suggestion appeared to us to have emanated from a lunatic asylum, as politely as possible we pointed this out.

Then, on the 6th, after twenty-four days' incessant paper warfare, the battle began to swing in our favour. First, we received a copy of a War Office letter addressed to Sir Douglas Haig, dated May 2, in which it was stated that the tank programme of January 21, 1918 (i.e. eighteen Battalions) would stand; that, during the present emergency, the personnel of the Tank Corps could be used by the Commander-in-Chief as he liked, but "not as infantry"; that no cadres were to be broken up, and that the formation of any tank units temporarily diverted to other purposes was to be resumed as soon as the emergency was over. To all intents and purposes this somewhat ironical document stalemated the reduction; because, if Sir Douglas Haig could not use the tank personnel as infantry, what could he use it for? He could not turn it into cavalry, or gunners, or sappers under months of training, and he could hardly suggest that tankmen should join the Army Service Corps.

Then came the second swing: General Foch asked G.H.Q. for the number of British tanks in France, their present distribution and armament, and also for the estimated production of machines in England between May 1 and December 31, 1918. To show units going down as machines went up was a little ridiculous, and G.H.Q. must have felt this.

Meanwhile General Capper was doing yeoman service

at Versailles, for there, against considerable opposition, he had persuaded the Committee to agree "that a large increase in our tank forces will give the best prospects of success in 1919," and that the Allies should place in the field 13,000 tanks and 125,000 tank soldiers, of which the British quota would be 3,300 machines and 45,000 men. When this went to Foch, it must have made G.H.Q. look more ridiculous than ever.

The swing in our favour was now shaping itself into an irresistible push.

Though for weeks we had received few new machines and no reinforcements, on account of the paper war we still had our five Brigades and thirteen Battalions firmly entrenched. For a long time now we had not visited G.H.Q., and our non-co-operative attitude had gained for us invaluable time. Then, on the 14th, G.H.Q. called us up twice and were given evasive answers. On the 15th we were called up three times, and on the 16th—five times! Inwardly I could not help chuckling, for from this I knew that the battle was to all intents and purposes won. Then there appeared one Beckwith Smith, a G.H.Q. liaison officer, who wanted to visit a Tank Brigade! Next Elles and I were asked to dine at G.H.Q. with General Davidson! We went and said nothing, refusing to press the retreating enemy. Whereupon, on the 17th, two liaison officers arrived from G.H.Q. to visit our Headquarters and Workshops! We were "too busy" to show them round; consequently, some junior officer had the honour of doing so. The truth is we stuck to the reductions in order to force the pace of their dissolution: we were taking no chances of half-measures.

Next, on the 20th, we received a three-line letter from G.H.Q.; it read: "Reference attached War Office letter. It is proposed to reply concurring in the revised establishments and expressing our readiness to receive remaining units at any time. Do you concur?" It was rather pathetic: the establishments were for four Brigades and the

new units were the 14th and 15th Battalions now ready at home. Here were two incompatible requests: one was for a reduction of three Battalions and the other for an additional two Battalions. So we softened our hearts and suggested that the reduction in face of this increase had better be postponed, because we could not reduce and increase at the same time.

On June 9 the War Office was informed by G.H.Q. that the 14th Battalion could be received after June 15, and the 15th after June 22; this sent the four Brigades' establishments west. Next, on the 8th, the War Office was informed that a decision had been arrived at to reconvert the Tank Lewis-gun Brigade into tank units, and further: "It is suggested that the reduction from five Brigades to four and from fifteen Battalions (including the 14th and 15th Battalions due from home) to twelve be not undertaken until it is forced by lack of reinforcements. . . ." Lastly, on the 18th, came the reply: "I am commanded by the Army Council to inform you that the proposals for the maintenance of five Brigades of the Tank Corps are approved."

Thus, after sixty-seven days' war on paper, the first decisive battle was won: the Tank Corps was saved and was actually two Battalions stronger than when this battle was launched. But what had the conflict cost us? The answer is worth a moment's examination.

The March disaster had left us in a state of complete confusion, and through no fault of our own discredit had been heaped upon us. That our *moral* had suffered is true, and that nothing of great value in war can be accomplished without the moral spirit is also true. Yet our Higher Command did nothing to repair this damage; instead, an axe was held over our heads, and its shadow cast a profound gloom over all attempts at moral resurrection.

Further, this damage was accentuated by the fact that, as improved tanks, the Mark V and Medium A, had been built, we knew our existing machine was obsolete, and also

we knew that much of our tactics and training would have to be recast if in the next battle we were to obtain the highest tactical value out of the new machines. Yet an embargo had been laid upon their importation, and for weeks, as I have shown, we could do nothing to lift it.

In actual fact the paper war we had been compelled to wage was a disgrace. There were we writing letters, equivocal and otherwise, when we should have been working sixteen hours a day at re-equipping ourselves, training ourselves and training with infantry, so that we might assist in winning the war instead of fighting for our self-preservation. The loss in time was criminal and G.H.Q. was responsible, and alone responsible, for this loss.

Moral salvation came from outside. On May 10, the 70th Chasseurs Alpains were billeted in our area, and they at once displayed the wildest enthusiasm for tanks. Their interest and excitement swept over us like a sea breeze; it was something so utterly different from what we had experienced from our own people. On the 11th Commandant Mason, commanding the 70th, dined with us, and insisted that I should come over to his area the next morning and lecture to his officers and N.C.O.s on the battle of Cambrai. I pleaded for a twenty-four hours' respite and was granted this, so it was not until the morning of the 13th that I stood on an improvised platform in a barn and delivered to the most intelligent audience any man could wish for the first lecture I had ever given in French. At first I tried to be grammatical, then I cast grammar to the winds, abandoned my notes and plunged into my subject. It was the greatest talking success I have ever had. My French was indifferent, but the audience was electrifying; it carried me forward until I felt that I was racing along one of Napoleon's great military roads on a high-powered motor bicycle. When I had finished I doubt whether the great Bernhardt could have received wilder applause. I was absolutely mobbed by questioners, and finally, quite

exhausted, was asked to dine with the Chasseurs Alpains Group Commander.

Hearing of this wonderful entente, which had been established in three days, on the 15th General Maistre, Commanding the Tenth French Army, came hot-footed to Bermicourt, not to ask for training between our tanks and his infantry, but to insist upon it. This day I noted in my diary: "It is indeed strange; here we are in the midst of our own troops, and G.H.Q. does not stir a finger to get our infantry taught even what a tank is. On the other hand, the French, no sooner do they enter our area, insist upon training with us forthwith."

Am I unjust to our side? Curiously enough, entries in my diary for the 18th and 19th answer this question. On the 18th Ronald Campbell lunched with us; he was the greatest physical-training expert the Army has ever had, and as a "moraliser" he was unique. He was very bitter about our neglect of elementary training, and he told me that it was nothing but Lewis gun, and that as men had with that weapon to do five hours' training a day for ten days to a fortnight on end, the result was that they were utterly "fed up" with the war and with everything else. Next, on the 19th, Kentish came and lunched with us; he also as a trainer of men was unique in his way. In 1915 I remember him taking over an indifferent and demoralised Battalion, and within three weeks it was a first-class fighting unit. He relied almost entirely upon personality, and at G.H.Q. was looked upon as anti-Christ. He told me that, when in command of the Commanding Officers' Course in Aldershot, he used to send his weekly programmes to G.H.Q. In one was included a rear-guard scheme; whereupon the C.G.S. wrote to him pointing out that the policy was that the British Army should attack, and that such schemes as this were waste of time.

To return to the French. I first got out a note for our own people on "Elementary Tank Tactical Training"; because, since the savage-rabbit insanity was introduced,

training had gone to the wall; further, casualties had sadly reduced the tactical knowledge in units. This note was a short one, suggesting: the weekly issue of a Brigade tactical note; ten-minute lectures to all ranks on these notes; Company tactical exercises based on these lectures, and so on up to Battalion exercises. Also, at this time, May 21, I sent a letter to each of our Brigadiers, and I think it was the most important I wrote during the war. I asked them to be ready in every detail—driving, tactical training, maintenance training and gunnery—for a great battle on August 1. That date was a pure guess; yet I felt by then something must happen. As a matter of fact, my reckoning was out by seven days, for, on August 8, the greatest battle of the war was fought. Some inspiration must have impelled me to do this, because at the time there was no idea of a general offensive.

The French training was wonderfully interesting. We had an excellent practice ground immediately to the west of the road which links Bermicourt to Sautrécourt and we at once got out a note in French headed—“*Thème de la Manœuvre de Combat devant avoir lieu à Sautrécourt.*” The exercises which followed were a sheer delight. It was quite unnecessary to teach the French soldiers, for they taught themselves; it was unnecessary to explain things to them, for this they did to each other. They were wonderfully intelligent when compared to British soldiers, and their enthusiasm in their training was unbounded. In order that they might communicate with our men, we issued a leaflet containing some fifty English and French military terms and questions, but they were seldom referred to; for signs, a few words and intense interest and curiosity accomplished practically everything.

How different from the Americans! We had been in touch with them ever since the early days of the battle of Passchendaele, yet we could make no progress whatsoever. Some 800 were sent to the Tank Training Centre at Wool and some 500 to train with French light tanks;

but at Bermicourt this is the kind of co-operation we received: On the 25th a letter, in reply to one of ours offering training facilities, came from Colonel S. D. Rockenbach, the U.S.A. Tank Commander. He said: "My hope is the same as when I first saw you—to get the maximum number of fighting tanks into action as rapidly as possible, and while I have a keen desire to take my personal toll from the Boche, I am not going to let anything stand in the way of giving him a thorough beating in the quickest time. . . . All our men are very keen to get in and to win the fight without regard to whom they do it with. If I don't get the machines to get on with pretty soon, I don't know how I can hold them."

"My personal toll" expresses no doubt an admirable sentiment; yet in the circumstances it was much more likely that the enemy would take toll of him and his like. It was largely General Pershing's fault, as he was adamant about keeping his formations intact. Had they been dispersed for a month or two, they would have gained invaluable experience; but apparently this was considered to be *infra dig*. So I wrote: "This year the Americans are going to do nothing; next year they are going to buy their experience at the price of 750,000 casualties; then, in 1920, they will really assist in winning this war. At present they are taking tea with everyone; touring round and looking for the best, instead of taking off their coats and earning experience so as to avoid the worst."

On about June 7 training with the French came to an end, and we were sorry to see them march away, because they were the only soldiers we came into contact with who took a real interest in us and our work. Immediately after they had gone I wrote a few notes on the experiences gained with them, for we had learned a good deal ourselves. Two or three may be worth quoting:

"The French troops were very intelligent and quickly grasped the idea of the tank attack. . . .

“ On one point the French were very keen, namely that hostile machine guns met with should be run over and destroyed . . . for destroyed they are finished with; but if not, there is always a chance of the guns being remanned. . . .

“ The demonstrations showed the necessity for the driver to be in full possession of the scheme of attack; also for him to use to the fullest extent the manœuvre power of his tank in order to destroy the hostile garrison and machine guns.

“ The demoralisation caused by a driver who handled his tank skilfully was most marked.”

I must now turn to a combination of events which soon was to introduce a totally different category of affairs, and yet one closely related to G.H.Q.'s obstruction and our searchings after a higher tactical efficiency. First, we had realised, ever since Searle's experimental machine had attained a speed of twenty miles an hour in February, that such a weapon would revolutionise warfare. Secondly, we realised that G.H.Q. were totally incapable of obtaining anything like the full value out of it. Therefore, a new machine demanded a new organ of direction, and as we could not change G.H.Q., the only thing to do was to remove tank control from G.H.Q. to the War Office, where Sir Henry Wilson now was C.I.G.S. and General C. H. Harington was his deputy.

Therefore, the first problem was, a new tank, and, on April 28, a Conference was held at Tank Corps Headquarters to consider the specification of a machine which could move at twenty miles an hour and which had a circuit of action of 200 miles. Out of this Conference the idea of the Medium D Tank took definite form; further, it was decided that Colonel P. Johnson, then on Searle's Staff, should be responsible for its design, and that authority, be obtained for him to be transferred to England to carry out this work. This a little later on was agreed to and done.

From the idea of this machine, combined with certain

deductions I had made during the March operations, on May 24 I worked out an entirely novel system of tactics; these I condensed in a paper entitled "The Tactics of the Attack as affected by the Speed and Circuit of the Medium D Tank," which, for brevity's sake, I will call—"Plan 1919."

Four days later I received a letter from Captain Foot, then a Staff Officer at Tank Command Headquarters, London, informing me that the War Office were "agreeably" considering tanks as a probable solution of our war difficulties. I thereupon left for England to add fuel to this small fire, and also to see General Capper about the 1919 tank programme, and the Ministry of Munitions about the Medium D machine. I left Bermicourt at noon that day, arriving in London at 6.30 p.m. I went straight from Victoria to No. 1 Regent Street, and there saw Foot, who told me that Sir Henry Wilson and Generals Harington and Radcliffe (D.M.O. and I.) were bitten with the tank idea. He showed me a scheme made out by Tank Command; yet I was of opinion that my "Plan 1919" was considerably more surprising and economical; but at the time I did not discuss it with him.

On the following day I saw General Capper and Sir Arthur Duckham and, on the 29th, Sir Albert Stern. I discussed "Plan 1919" with Sir Arthur, who promised to send a copy of it to Mr. Churchill, which he did.

On the 31st I called on General Harington at 3 p.m. and had a long talk with him lasting until nearly five. He told me that when first he came to the War Office he could not find a solitary soul who knew anything about tanks. He then wrote to G.H.Q. for their policy; but they had none, nor had they the time to formulate one. Then he asked me to prepare a paper on the entire reorganisation of the Tank Corps, on lines which would enable the War Office to control it. Finally he asked me whether I would be willing to come to the War Office and assist him. This came as a surprise to me, and though I had every personal

reason for saying "No," I felt, in the circumstances, that it was my duty to the Tank Corps to say "Yes." This I did; then I left with him a copy of "Plan 1919," as I wanted him to assimilate it at his leisure, and, on June 1, I returned to France.

Thus the month of May was survived; not only was the Tank Corps saved, but it was actually rising in the ascendant and was beginning to peep above the ground mists of Montreuil.

Directly after my return I set to work with Uzielli on the reorganisation scheme. Meanwhile Harington must have roused G.H.Q.; for, on the 3rd, I received a request from General G. P. Dawnay to give all assistance I could to Major C. Headlam, who had been instructed to write a Tank Manual. At the time it seemed a little strange that I had not been asked to do so; for thus far all notes, etc., on tank tactics and training had been written by myself. However, this was not my business, and later on that day and again on the 4th Headlam came to me to be primed up. He stated quite frankly that he knew nothing about tanks. Then I asked him if he were a regular soldier, and as he said "No," I replied: "Well, anyhow you will start without a handicap."

On the 6th I posted our reorganisation scheme to General Harington, and as it is too long a paper to give in full, I will summarise only such parts of it as more particularly affected my own work. The two ideas underlying it were: (1) To bring the Tank Corps into the army system; and (2) to establish co-ordination of action between that Corps and the Tank Corps of our allies.

Diagram 15 shows the then existing organisation, in which the thick lines correspond to the channels of G.S. work. From this it will at once be seen that all these lines emanated from the Directorate in England and Tank Corps Headquarters in France, which together formed the brain of the organisation, a brain divided into two lobes or compartments. Outside the Tank Corps no normal

system of communication existed between its Headquarters and the other arms.

Taking the arrows in turn: In (*a*) and (*b*) command was complete. In (*c*) command was purely suggestive; because G.H.Q. possessed no tank knowledge, and could only pass on suggestions and without any sense of conviction. Through ignorance they could not co-ordinate the information received with the action of the other arms—hence the non-existence of a tank policy. As regards (*d*), command was optional. If the Army to which a Tank Brigade was attached disagreed with the Tank Corps' suggestions, the Tank Brigade had to carry out the Army plan. The Army, similar to G.H.Q., had no tank knowledge; consequently, the result was little real confidence in tanks and no settled plan of action. In (*e*) command was through Army pressure. Thus, when channel (*c*) ceased to function, it was sometimes possible to stimulate the action required by approaching G.H.Q. by channel (*h*) via channel (*e*). This was highly irregular, but frequently effective. Channel (*f*) represents the Tank Committee, the chief function of which was to harmonise design and tactical requirements. The Controller of the Mechanical Warfare Supply Department was responsible for design and production. The system of concentrating these two in one department and to all intents and purposes divorcing that department from experiences gained in France impeded improvement in design and resulted in endless waste of work.

The system we proposed is shown in Diagram 16. The changes suggested were as follows: (1) The abolition of the Tank Corps Directorate and the addition of a Tank G.S. Section to the I.G.S., War Office, the duties of which would be policy, operations, liaison with Allied Tank Corps, liaison with British Tank Corps and the training of new units and reinforcements in England. (2) The addition of a G.S. Officer to the G.S., G.H.Q., and the bringing of the G.O.C. Tank Corps into close contact with G.H.Q. on

the lines of the Cavalry Corps Commander. His G. Staff to consist of a small Operations and Intelligence Section, a strong Battle Liaison and a strong Training Section. His A. and Q. Staffs and Technical Staff to remain approximately as constituted. (3) The formation of Groups of two Heavy and one Medium Brigades each, to be allotted to Armies as required. The Tank Group Commanders to command their Groups, which would be looked upon as Army Troops, and to advise the Army Commanders as to the employment of tanks.

It will be seen that this system placed the Tank Corps on the normal Army footing: the War Office would collect all tank ideas from all Tank Corps and formulate a tank policy, and G.H.Q. would set this policy in motion after working out the details with its expert—the G.O.C. Tank Corps. All orders would pass through the various General Staffs, and experiences would be collected by the G.O.C. Tank Corps through his battle liaison officers, and forwarded through G.H.Q. to the War Office for rectification of tank policy.

As regards unity of action within the Allied Armies, it was suggested that the first thing to do was to discover what were the aims and possibilities of the various Tank Corps. This matter to be taken in hand by the Supreme War Council. Once these aims and possibilities were known, this knowledge to be submitted for the consideration of the Allied General Staffs sitting in Committee. This Committee would then co-ordinate the views set forth with the general strategical plan for 1919, and issue a strategical and grand tactical policy on the employment of tanks and their requirements. The requirements would then be submitted to the Allied Governments for decision as to the feasibility of production, and accepted or returned for amendment. If, or when, accepted, the General Staff Committee to be dissolved.

It seems to me somewhat strange now, that this scheme, much of which was accepted, and most of which would

have been had the war lasted into 1919, was worked out by two comparatively junior officers—Uzielli and myself—and was not even suggested by G.H.Q. It shows how completely inoperative that organ of command was, and the blame must be placed upon the shoulders of Sir Douglas Haig, a man totally unreceptive to new ideas.

Once this scheme was off my shoulders, I turned to problems nearer at hand, the two main ones being: the issuing of "Standing Orders for Operations," which covered "Preparations for Battle," "Approach Marches," "Action," "Withdrawals" and "Battle Liaison," and a manual on the "Characteristics and Tactics of the Mark V, Mark V One Star and Medium A Tanks," a pamphlet too long to be summarised here, but upon which all our training was now to be founded.

No sooner was this ready for duplication, than, on June 22, General Harington summoned a War Office Conference for the 26th, instructing Elles and myself to attend. Elles left for England on the 24th and I on the following day, as I was busy preparing a list of notes on the agenda, which was an extensive one, covering reorganisation, means of expansion, programme for 1919, means of thinking ahead, the Medium D machine, Inter-Allied problems, tank schools, a training manual, etc., etc.

On the 26th we met at 3 p.m., and it was an imposing assembly, including Mr. Churchill and Generals Harington, Furse, Seely, Capper, Lynden Bell, Radcliffe, Dawnay, Elles and others.

General Harington, who was in the chair, opened by saying that it was necessary to lay down definitely what our future tank policy was to be. He then went on to discuss the question of expansion, and pointed out that, though our present tank personnel numbered some 17,000 in all, we must prepare plans to increase this to 45,000 or 50,000. To this Mr. Churchill said, that if the War Office could find the men, he would supply the machines, and that what he wanted was the military plans and requirements to carry

them out. The question of reorganisation was then discussed, and also the preparation of a concrete scheme to put before our allies with reference to the tank policy of the future, the part we proposed to play and the parts they should play.

On the whole, little was actually decided upon outside the establishment of a tank department in the War Office, which was to come under my direction. That, anyhow, was something definite.

I returned to France on July 3, and the next day was fought the remarkable battle of Hamel, in which the 5th Tank Brigade covered itself with glory.

Though this battle was in no way one of the major operations of the war, psychologically it was a decisive one, and more so than that of Cambrai; for whilst the attack of November 20 was entirely lost on G.H.Q., that of July 4 convinced Sir Henry Rawlinson, Commanding the Fourth Army, of the value of tanks, and without this conviction it is doubtful whether the great battle of August 8 would have been fought.

Whilst the tactical problem entailed was not merely that of advancing to a certain line, but of testing out the powers of the new Mark V machine, the psychological problem was: first to win over the confidence of the Fourth Army Commander, and secondly, the confidence of the 4th Australian Division, which was to carry out the attack; for ever since the battle of Bullecourt, on April 11, 1917, the name "tank" had been anathema to it.

When the question of using tanks first arose, General Rawlinson's idea was that they should play an entirely subordinate part. I remember talking this question over with him, and though I could not get him to agree to allow tanks to lead the van, that is to precede the infantry into battle, I think I convinced him that the Mark V tank would play a more decisive part than he at first imagined.

As regards winning the confidence of the Australians,

this was not a difficult matter, and it was accomplished by close co-operative training with the 5th Tank Brigade, then commanded by General Courage; all training being arranged by the Australians themselves. This was so successful that, days before the battle was launched, the closest comradeship was established between the two formations, each Australian unit training with the tanks which would eventually co-operate with it.

The objectives of the attack were Hamel, Hamel and Vaire Woods, and the high ground east of those localities, the occupation of which would deprive the enemy of observation and improve our own. In order to reduce casualties, it was decided that as few infantry and as many tanks as possible were to be employed. This was a new idea, though one which since early in 1917 had consistently been suggested by the Tank Corps. The upshot was that only two and a half Brigades of infantry, that is ten Battalions in all, were allotted to attack a frontage of approximately 6,000 yards, widening to 7,500 on the final objective, and to penetrate to a depth of 2,500 yards. This actually meant that each front-line Battalion would attack on a 1,000-yards front, or one-third of the frontage of either the XVIIIth or XIXth Corps at Ypres in July 1917.

The order of battle between infantry and tanks is fully illustrated in the map. The general plan was a simple and straightforward one, and as secrecy was essential, until X/Y night the front of attack was held by the 12th and 13th A.I. Brigades, which were then withdrawn into reserve, their places being taken by the 4th A.I. Brigade, two Battalions of the 6th A.I. Brigade and the 11th A.I. Brigade, as well as four Companies of the 33rd American Division, which were incorporated by Platoons in the attacking Battalions of the 4th and 11th A.I. Brigades.

The artillery arrangements were based on the employment of 326 field guns and 302 heavy; no preliminary bombardment was to precede the attack; the covering barrage and counter-battery fire were to open at zero hour, the barrage

consisting of 60 per cent. 18-pounder shrapnel, 30 per cent. H.E. and 10 per cent. smoke shells, and was to be placed 200 yards in front of the infantry line of departure. There was, consequently, to be no wire-cutting; therefore the artillerymen started fresh.

One hundred and fifty-seven machine guns were to be used, of which 111 were to supplement the barrage and 46 to move forward with the attack. From Zero + 30 minutes the R.A.F. were to bomb enemy Headquarters and horse lines. Actually in the battle they dropped 1,100 25-lb. and 58 112-lb. bombs on these targets, and supplied 114,000 rounds of S.A.A. to the Australian machine gunners by means of parachute drops.

In all, sixty fighting tanks and four supply tanks took part; the former being assembled on a line 1,200 yards in rear of the attacking infantry, and the latter carrying forward 50,000 lb. of supplies.

On the night of July 2/3 the tanks assembled in the villages of Hamelet and Fouilloy, and at 10.30 p.m. on Y/Z night they moved forward to their forming-up line. On Z day their engines were started up at 2.59 a.m., and at 3.2 a.m. they moved forward toward the infantry, zero hour having been fixed for 3.10 a.m. The infantry was soon caught up with and in most cases passed, and at 5.0 a.m. the battle was over, all objectives having been occupied. A few minutes later the supply tanks came up, and each delivered to the front-line Australians: 124 coils of barbed wire, 300 short screw picquets and 130 long, 45 sheets of corrugated iron, 150 Stokes T.M. bombs, 10,000 rounds of S.A.A. and 100 gallons of drinking water. Unofficially, also several bottles of whisky.

In rapidity, brevity and completeness of success no battle of the war can compare with Hamel; for such a battle one must go back to mediæval times, that is, to the *mêlées* of armoured knights. The economies were remarkable: the Australian losses were 672 men killed and wounded; of the 60 tanks 58 reached their objectives and 55 returned

to their rallying-points, and the 5 which were disabled were salvaged by the night of July 6/7. Of the tank personnel, no single officer or man was killed and only 13 O.R. were wounded, of these 5 slightly, who remained on duty. On July 4 and the following days 200,000 shells were fired and 426,850 rounds of machine-gun S.A.A., insignificant amounts when compared with former battles.

The lessons we learned from this battle were all-important, and I incorporated them in "Battle Notes No. 2," which was issued on the 13th; they are, however, too numerous to include here; but I will say this: without them our success on August 8 would have been less than it was. Finally, I should like to say one other thing, namely that Hamel stands not only as an example of the perfect battle, but as a justification of Elles's incessant demands for a policy of tank raids. Though the Mark IV tank was less handy than the Mark V, I will repeat it again, there was no reason why, with the twelve Battalions of tanks we had, we should not have carried out several such raids between January 1 and the middle of March. And had we done so, there can be little doubt that the entire German spring offensive on the Western Front would have been upset; that is, in all probability, there would have been no Second Battle of the Somme, no Battle of the Lys and no Third Battle of the Aisne; that the *moral* of our Armies, sapped by the passive defensive, would have been raised by each raid and that of the enemy's armies lowered. Therefore, not in what it accomplished—the capture of a few square miles of ground and 1,506 prisoners—is to be sought the value of this battle; but instead, in the realisation of the idea underlying it. Now we, or rather they who had stood outside our mental ranks, began to see clearly that it was all a matter of common sense—of a steel plate stopping a bullet. This was the decisive turning-point in our tactics, and from July 4 onwards there was no question of who would or could win the war on land—the philosophers' stone was ours.

CHAPTER XII

IRON, IRON EVERYWHERE !

To us the value of the battle of Hamel was not that it was a tactical but a theatrical sensation. Not since such battles as Zagonara and Mollinella in the fifteenth century had one been fought in which the dominant arm had not lost one man killed. Though we did not realise it at the time, I realise it now that, on July 3, 1918, we were no more than a poor street singer, and, on the 4th, this singer standing on the stage of a great opera house deafened by applause. With us these thunderings were moral and subconscious, yet they were very real, for they excited an intense curiosity in us, and this began on the 5th, when Lord Milner, Secretary of State for War, came to our Headquarters to see the now haloed weapon.

The last time I had met him was at Cape Town in 1900, when, as a subaltern, I had called at Government House. Since then he had of course aged, but he was still young in mind, and, on the 6th, when we gave him a full-dress demonstration, he took the keenest possible interest in everything. He would ride in each type of tank we had, and I can still see him scrambling into a Mark V so excitedly that he sat down in a puddle of oil and never noticed it.

Then came "Tom" Hollond to have a look at us, next General Sir J. A. L. Haldane, one of our best friends, next several others, and, on the 25th, General C. Grant, at this time attached to Foch's Staff.

The outcome of Lord Milner's visit was that I prepared for him a paper called "Notes on Tank Economics"—in all some nine to ten pages of statistics which were divided up under the following headings: I. Economy of Men

per Weapon ; II. Economy of Fighting Man-power ; III. Economy in Infantry Casualties ; IV. Increase in Enemy's Casualties ; V. Economy in Artillery Personnel ; VI. Economy in Cavalry Personnel ; VII. Economy in Ammunition and Manufacture ; VIII. Economy in Transportation ; IX. Economy in Weight carried by Infantry in Action ; X. Economy in Labour on the Battlefield ; XI. Economy of Property ; XII. Economy of Tonnage and Forage ; XIII. Economy of Petrol over Hay ; XIV. Economy of Time.

Though several of my calculations are not accurate, inaccuracy lies rather in under- than in over-statement. And as these figures show that our frequent assertions of superiority were not empty words, it may be of interest to quote a few :

“ A Brigade of 108 heavy tanks has the following fire power: 108 6-pounder guns, or the equivalent of 18 light six-gun batteries, and 540 machine guns, or about twice the number of Vickers and Lewis guns in an Infantry Division. With this additional fire power an Infantry Division accompanied by two Battalions of tanks, seventy-two, can attack on a 4,500-yards frontage, which is three times the normal frontage without tanks. In the Hamel operations, three Australian Infantry Brigades and sixty tanks attacked on a frontage of 6,000 yards. In other words, this means that an Infantry Division and two Battalions of tanks have a fighting power equivalent to three Infantry Divisions. Calculating the infantry in three Divisions at 18,000 men and the personnel in two Tank Battalions at 1,000, the saving in infantry alone is 11,000 men, or 63 per cent.

“ From the commencement of the bombardment at the battle of Passchendaele to zero hour on Z day, 10,000 casualties were suffered through the German counter-bombardment. At Cambrai these casualties were practi-

cally nil, and during the first day of the battle they numbered only 6,202.

“ The following statistics are interesting: Somme, 15.9.16, one tank operating alone, no casualties, 300 enemy surrendered to it. Somme, 25.9.16, one tank and one Company of infantry operating, 362 prisoners surrendered. Somme, 14.11.16, two tanks operating, no casualties, 400 enemy surrendered. Cambrai, 20.11.17, six Divisions and nine Battalions of tanks co-operating, casualties 6,202, 8,000 prisoners and 100 guns captured, enemy killed and wounded unknown. Cachy, 24.5.18, seven Whippet tanks operating alone, casualties five killed and wounded, enemy's killed and wounded approximately 400. Hamel, 4.7.18, three Infantry Brigades and sixty tanks co-operating, casualties 686, enemy prisoners 1,506, killed and wounded unknown.

“ At the battle of Passchendaele 121,000 artillery personnel were required for an attack on a 17,000-yards front. At Cambrai most of the work normally allotted to the gunners was carried out on a 13,000-yards front by 4,100 tank officers and men.

“ The total personnel in a Cavalry Division (less R.H.A.) is 7,406, and in a Light Tank Brigade 2,710. The saving in personnel is therefore 4,696. This saving equals approximately the personnel of two Light Tank Brigades; consequently a Cavalry Division with a few extra men added could be converted into a Group of three Light Tank Brigades of 540 tanks. The number of times its offensive power would be multiplied is incalculable.

“ Compared to the battles of Arras and Passchendaele, the saving in tonnage of shells at Cambrai was approximately 51,000 tons and 87,000 [102,000] tons respectively. This means not only an enormous economy in transport, but in manufacturing man-hours as well.

“ Reckoning the cost of a shell at £5 and a tank at £5,000, the saving in manufacturing man-hours when comparing the Cambrai attack to that of Arras is as follows: At Arras 2,000,000 shells represented in cost £10,000,000, or 80,000,000 man-hours at 2s. 6d. an hour. At Cambrai 400 tanks represented £2,000,000, of which the loss through casualties of forty-eight tanks represented £240,000, or about 2,000,000 manufacturing man-hours.

“ A pack-horse can carry eight rounds of 18-pounder or four of 4·5-inch howitzer ammunition. . . . One supply tank can carry or haul 10 tons of shells, i.e. 800 18-pounder, 450 4·5-inch howitzer, 250 60-pounder or 200 6-inch howitzer shells. . . . One tank therefore can carry as many 18-pounder shells as 100 pack-horses.

“ At present an infantryman goes into action carrying 72 lb. At least 40 lb. of this could be carried for him on the line of march and 20 lb. in action by supply tanks. Taking the latter figure—20 lb.—if an Infantry Battalion goes into action 650 strong, one supply tank would be able to carry or haul 20 lb. for each of the 650 men.

“ A Cavalry Division, less R.H.A., requires monthly 200 tons of food and 2,100 tons of forage. During the same period a tank Brigade requires 70 tons of food and 200 tons of petrol. The saving is, therefore, 2,030 tons a month.

“ Since they have been in France, the horses of the Cavalry Divisions have eaten a weight of forage which is equal to the meat ration of London and the Home Counties (10,000,000 people) for a period of more than two years.

“ At Cambrai a penetration of 10,000 yards was effected from a base of 13,000 yards in twenty-four hours. At Ypres [in 1917] from a base of 17,000 yards a similar depth of penetration took three months. During these three

months scores of millions of money and tens of thousands of lives were expended.

“ From another point of view a tank is a time-saver. By saving men it renders time productive, for time is useless without human energy to exploit it. It takes nineteen years to produce a fighting man and five to produce a good draught horse; but the actual making of tanks is but a matter of a few weeks once the plant is laid down.

“ One thing is certain, namely that the saving in time in manufacture by the introduction of the steam engine has been enormous; it is equally certain that the introduction of the petrol engine on the battlefield will produce as colossal a result.”

These notes finished, once again I went over to England to supervise the reorganisation, and, on the 15th, I called in at the War Office to see General Lynden-Bell, the Director of Staff Duties. Already, on the 11th, General Wigram at G.H.Q. had suggested the appointment of a G.S.O.1, a G.S.O.2 and a G.S.O.3 in London, which to me was a meaningless arithmetical progression. I would have none of this, and I had already arranged with General Harington that I was to be given a free hand in the selection of my Staff; that I was to be allowed to visit France whenever I liked, and that I was to be provided with a shorthand-writer—a rare luxury in those days. As he had agreed to this, I explained to General Lynden-Bell that as the bulk of my work would fall under four headings—operations, Staff duties, training and technical duties—my Staff must be organised accordingly; therefore, that I should require the following:

(1) Operations.	Policy.	Colonel, G.S. (myself), G.S.O.2, Liaison Officer, G.S.O.3.
(2) Staff Duties.	Establishments. New Units. Reinforcements.	G.S.O.2 and Assistant.
(3) Training.	Tactical Work.	G.S.O.2 and Assistant.
(4) Technical.	Design.	G.S.O.2 and Assistant.

The four G.S.O.2's I had selected were: Major S. H. Foot, Captain E. C. Quilter, Major C. R. T. Thorp and Major C. W. G. Allen.

General Lynden-Bell scrutinised the list and said: "All regulars, I suppose?" To which I answered: "One only." I think this came as a shock to him, but as he knew that my object was to get on with the war, he let it pass. Later on an argument arose—who started it I do not remember—that officers who had never served on the General Staff could not enter that brotherhood as G.S.O.2's. Whenever this subject was broached, either I put the file into the waste-paper basket or cut off the speaker—this saved a lot of time and senseless ritualising.

I told General Lynden-Bell that my first object was to elaborate policy, and my second to work out the tactical requirements which would render it operative; therefore I should have to concentrate on the future more than on the present. Yet, as far as possible, my method would be to draw deductions from the past and base those for the future on them. This meant that specification and examination of design from the tactical point of view must be mine.

In order that I could arrive at a policy, it was essential that I should be in close touch, not only with our own Tank Corps, but also with those of our Allies. Therefore I must be allowed to visit France when I liked, and, consequently, I had arranged my Staff in such a way that it would free me of all purely routine duties.

To all this General Lynden-Bell agreed, for he was a broad-minded soldier, who realised that to give me a free hand was far more likely to lead to efficiency than to tie me down.

This done, I returned to France on the 17th, and, on the 19th, in his turn Elles went over to England.

On the 21st I was sitting in my office at Bermicourt when the telephone bell rang. It was Fourth Army Headquarters calling, and General A. A. Montgomery, the

M.G.G.S., wanted to speak to Elles, and as Elles was away, he asked me to come down to Flexicourt and see him.

As I put the receiver down, the idea flashed through my head that this meant that General Rawlinson was considering an attack, and it was not exactly an intuition, because almost daily I had gazed at the map of our front which covered one wall in my hut. On it were three pronounced bulges: one pointing towards Hazebrouck, one towards Amiens and one towards Château Thierry. The last had been attacked by the French only three days before and had collapsed; the second had long appeared to us as a gift, if only tanks could be launched against it east of Amiens and north of Compiègne.

I was so certain this call meant an attack that, as I entered General Montgomery's office, I exclaimed: "It's a sitter!" To which he replied: "What is?" And I answered: "The attack you are contemplating." He seemed a little taken aback until I explained to him that we had been thinking about it for weeks. I then discovered that what I was wanted for was to attend a Conference which was then in process of assembling, for as I was talking car after car drew up outside the château.

This Conference was presided over by Sir Henry Rawlinson, and those attending it were General Currie, Commanding the Canadian Corps, General Monash, Commanding the Australian Corps, General Butler, Commanding the IIIrd Corps, General Kavanagh, Commanding the Cavalry Corps, a representative of the R.A.F., myself and a number of other Staff Officers.

The preliminary arrangements were as follows: Ever since the battle of Hamel the idea had been growing that an attack on a larger scale, but of a similar kind, should be undertaken, and, on July 13, Sir Douglas Haig had asked General Rawlinson to consider such an operation. This he did, submitting the following proposals on the 17th:

He considered the conditions favourable, because the enemy's defences were weak, and since July 4 the enemy's *moral* had declined. Further, the country was dry and unbroken by shell fire, and good observation for artillery was obtainable.

The operation he suggested should be a purely limited one, namely the capture of the Amiens outer defence line running from Le Quesnel through Caix to Méricourt, which when gained would assure the safety of Amiens by driving the enemy out of shell range of that city. Further, it would improve our position as regards the French First Army on our right; it would shorten the Allied front, gain valuable observation, and possibly inflict a serious blow on the enemy at a time when his *moral* was likely to be low owing to his failure in the Champagne offensive.

Surprise and secrecy were to be the watchwords, and for this reason General Rawlinson was strongly averse to the operation being a closely combined Franco-British undertaking. Should the French desire to take part, he considered that they should launch an affiliated, but not combined, operation from about Montdidier.

At present the Fourth Army consisted of the Australian Corps—four Divisions; the IIIrd Corps—three Divisions; the 33rd U.S. Division and the 8th Division in G.H.Q. Reserve. Not considering this force sufficient, in addition he had asked for the 1st Australian Division and the Canadian Corps—four Divisions.

As in the attack of July 4, in order to economise in infantry he proposed to employ as many tanks as possible, and also to make full use of supply tanks in order to reduce infantry carrying parties. Six Battalions, or 196 machines, he considered would be necessary for the initial attack and two Whippet Battalions for exploitation.

These proposals General Rawlinson explained to those assembled, after which a general discussion followed. When he asked me how many Battalions of tanks we could have ready within the next fortnight, I told him, "The

whole Tank Corps if necessary," though the 1st Tank Brigade was still equipped with Mark IV machines and would not be able to take over Mark V's until the middle of August; also the 9th Battalion might be incomplete in machines, because, on the 23rd, it was supporting a French attack a little south of Moreuil. I then hazarded a suggestion; I said: "If the greater part of the Tank Corps is to be used, why not make the attack less limited, that is, more decisive?" And, as I did so, General Monash looked up and exclaimed: "Yes, I have been thinking of that myself." This led to a discussion on exploitation and what the cavalry could do if supported by Whippet tanks. Personally, my opinion was that they could accomplish next to nothing, and that to attach two Battalions of Medium A machines to them was an utter waste of good metal. I pointed out that tanks and horses could not co-operate together, because one was bullet-proof and the other was not. Instead, I suggested that, as the French First Army would have very few Renault tanks to support it, seeing we were not going to supply them with Mark V's, we should hold our two Whippet Battalions in reserve, and when the Mark V's and the infantry broke through the enemy's front, these two Battalions should move out from Villers-Bretonneux to or towards Rosières-en-Santerre, swing right and on a wide front sweep southwards through the German artillery and services facing the French First Army; eventually emerging south-east of Montdidier. My opinion was that if this were done, a gap of over twenty miles would be created, and that the enemy would not be able to block it.

Though I realised that such an operation was a risky one, I held, and still do, that it was feasible and would have proved decisive. Anyhow, General Rawlinson set it aside, probably on account of its risks, but I think also because he did not trust the French to make good what the tanks might render possible. When the Conference ended, though the original scheme had been somewhat enlarged, it still

remained a limited operation. I was given a copy of the Fourth Army proposals and asked to submit details on them as far as tanks were concerned.

My problem was by no means an easy one; first it was complicated by almost daily Conferences extending over the best part of a week, and secondly by the attack of the IXth French Corps south of Moreuil on the 23rd; for in it the 9th Battalion, co-operating with the 3rd French Infantry Division, suffered heavy casualties. These were mainly due to the French halting for two hours on the second objective in place of pushing straight on to the third. They simply did not understand heavy tanks.

As regards the first of these difficulties, the truth is that G.H.Q. had no plan—only an idea. Someone, probably either the Commander-in-Chief or the C.G.S., considered that conditions on the Fourth Army Front were favourable for an attack, and then in place of clearly defining the type of attack, and informing General Rawlinson of the additional troops which would be allotted to him, all that was done was verbally to tell him to mount one. He, in his turn, at once asked for reinforcements, and not being in a position to know what type of attack should be budgeted for, and not being able to obtain a clear definition from G.H.Q., he very naturally planned the forthcoming battle as purely a Fourth Army operation—that is, a strictly limited one. As such it differed in conception entirely from the Cambrai battle, which was planned as a decisive and, consequently, unlimited operation; therefore in this projected attack the question of reserves did not assume so great an importance.

Bearing this in mind, my first distribution of tanks to Corps was as follows:

Third Corps: 10th Battalion; one Company for A and two Companies for B.

Australian Corps: 5th Tank Brigade, plus 15th Battalion, plus one Company of Whippets. Two Battalions for C; one Battalion for D; the Battalion for C, after rallying, to

proceed on to E, and the Company of Whippets to exploit into F.

Canadian Corps: 4th Tank Brigade, plus 14th Battalion, plus one Company of Whippets. One Battalion for G; one Battalion for H; two Companies for I, and one Battalion and one Company of Whippets for K.

First French Army: One Company of Mark V's and one Company of Whippets, so that the right flank of the Canadian Corps would not be restricted by a slower advance on part of the left of the French First Army.

Cavalry Corps: One Battalion of Whippets for exploitation into L, and if necessary from L into M.

General Reserve: 9th Battalion.

First French Army	Cavalry Corps		Australian Corps	IIIrd Corps
	Canadian Corps			
J	I G First Objective	C C	River Somme	A Green Line
	I H Second Objective	D D		B Red Line
M	K Third Objective			E E Blue Line
	L	F		

My idea was, on account of the limited nature of the operation, to make use of local reserves instead of a strong general reserve. These would be as follows:

10th Battalion: None for A. Tanks operating in A to reorganise and act as a local reserve for B.

5th Tank Brigade: Two Battalions operating in C, each to hold one Company in local reserve. One Battalion for D, one Company in local reserve. One Battalion for E, no local reserves.

4th Tank Brigade: One Battalion for G, one Company in local reserve. One Battalion in H, one Company in local reserve. Two Companies for I, one Section in local reserve.

First French Army: One Company of Whippets in local reserve.

The reserves would then be as follows: one Battalion in general and six Companies and one Section in local reserve.

This distribution was turned down and the following was made out by me to order on the 26th:

10th Battalion to operate under the IIIrd Corps north of River Somme.

5th Tank Brigade plus the 15th Battalion to operate under the Australian Corps.

4th Tank Brigade to operate under the Canadian Corps.

9th Battalion to operate under the 8th Division.

3rd and 6th Medium A (Whippet) Battalions to operate under the Cavalry Corps.

As the 14th Battalion had not been included, I suggested that it should be held in Army reserve.

In accordance with this order of battle I worked out a distribution of Battalions to objectives and submitted the following detail:

(1) That twenty-eight trains would be required to move Battalions into the area. The 2nd, 8th, 9th and 13th Battalions were already with the Fourth Army.

(2) That preparation would take eight days.

(3) That the rail moves would take three to four days.

(4) And that two days would be required for moves forward from railheads to the lying-up places.

As regards supply tanks, I informed the Fourth Army G.S. that each Battalion would have six, and most four baggage tanks as well, which if necessary could be used to carry forward trench mortars and ammunition. In addition, some thirty supply tanks or gun carriers could be placed at the disposal of the infantry.

Finally, I pointed out that the Canadian Corps had done very little training with tanks; therefore I urged "that every step should be taken to improve this training . . . even if a few cornfields are destroyed."

Then, on the 29th, G.H.Q. stepped into the arena, and the scope of the operation was extended as follows:

To disengage the Amiens–Paris railway by occupying the line Hangest (Le Quesnel)–Harbonnières–Méricourt, driving the enemy back in the direction of Ham. Next, when the Méricourt–Hangest line was secured, the Fourth Army, keeping its left flank on the Somme, was to press the enemy in the direction of Chaulnes. Meanwhile the French First Army, with its right on the Avre, was to press the enemy in the direction of Roye, special attention being paid to the maintenance of connection between the two Armies. Consequently, it was of vital importance that the French left should move forward as rapidly as the Fourth Army right, and it was for this reason that, in my original distribution, I had recommended sending two Companies of our tanks to co-operate with them.

The forces placed at the disposal of the Fourth Army were as follows:

Canadian Corps—four Divisions.

Australian Corps—four Divisions.

IIIrd Corps—two Divisions.

Cavalry Corps—three Cavalry Divisions.

Tank Corps—twelve Battalions.

On the 30th I issued “Tank Corps Orders No. 21 and No. 22,” in which the final allotment of tanks was laid down. It was as follows:

Canadian Corps: 4th Tank Brigade—1st, 4th, 5th and 14th Battalions.

Australian Corps: 5th Tank Brigade—2nd, 8th, 13th and 15th Battalions.

IIIrd Corps: 10th Battalion.

General Reserve: 9th Battalion.

Cavalry Corps: 3rd Tank Brigade—3rd and 6th Battalions.

Supply tanks were allotted as follows: 54 to the 4th Tank Brigade; 48 to the 5th Tank Brigade, and 18 to the 10th Tank Battalion; a total of 120, of which 54 were for tank and 66 for infantry supply.

Regarding fighting machines, the 3rd and 6th Battalions were equipped with 48 Whippet tanks each and all other Battalions with 42 Mark V machines each (36 fighting and 6 training tanks), except the 1st and 15th Battalions, which were each equipped with 36 Mark V One Star machines.

Similar to the battle of Cambrai, the attack was to be led by tanks, and no artillery registration or bombardment was to precede the assault. In all, 82 Brigades of field guns, 26 Brigades of medium artillery, and 13 Batteries of heavy guns and howitzers were to cover the attack.

Elles did not return from England until late on the 28th, when he was somewhat surprised to find a great battle in process of preparation, a battle which had sprung up like a mushroom in the night; for, when he left on the 17th, we at Tank Corps Headquarters had had no idea that one was then being considered. I ran through our preparations with him, and, on the 31st, left for London to open my new Department, called S.D.7 (Staff Duties 7) at the War Office; to hurry back again on the 6th, stopping the night at Bermicourt, and early the next morning going on to Advanced Tank Corps Headquarters at L'Etoile, a mile or two west of Flixecourt. There I found my successor, Colonel H. Karslake, installed; but, as I had been engaged on all the preparations, he remained little more than a spectator during the next few days.

In my turn I was to be surprised, for during my absence the idea of the battle had once again changed. On August 5 G.H.Q. had extended the operation, and this time had virtually turned it into an unlimited one. The new instructions read, "that in the event of an initial success the battle will develop into one of considerable magnitude." Three British Divisions were now to be assembled as a general reserve close behind the battle front, and further Divisions were to be held in readiness behind the rest of our front to move south if required.

The first objective remained as before; but the pushing of the enemy towards Chaulnes was enlarged into opening a way for an advance of the French from the front Noyon-Montdidier.

Though this was strategy of the first order, which my original independent tank manœuvre would greatly have facilitated, it was now too late to press for its reconsideration, because the two Medium A Battalions had been anchored to the cavalry. The truth is, that the whole plan had grown up anyhow out of a series of independent "brain-waves"; it was in no way co-ordinated by a clear-cut initial idea.

Further, I learned that the 17th Tank Battalion, which had joined us in May and was equipped with armoured cars, and which towards the end of July had been loaned to General Fayolle's Army, then operating in the vicinity of Fère-en-Tardenois, had since my departure been recalled and was now placed under the orders of the 5th Tank Brigade.

On the 6th G.H.Q. had informed all concerned that the battle would be launched on August 8, and that zero hour would be 4.20 a.m.

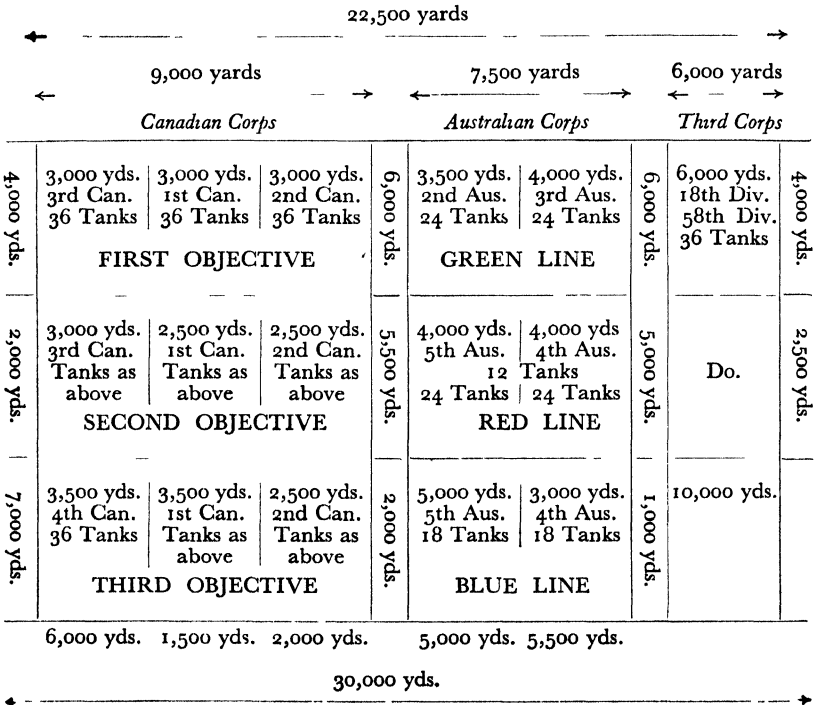
L'Etoile was a quiet little spot, and our Advanced Headquarters were pleasantly situated close to the River Somme. There the war seemed to be miles and miles away, and so, in fact, it was, for L'Etoile was some fifteen miles west of Amiens. Having glanced through the various orders and instructions issued during my absence, I motored out towards the front to have a word or two with Brigade and Battalion Commanders, for it had for long been my rule to leave things as they were on a Y day.

Amiens, long deserted, for all civil inhabitants had been evacuated shortly after the German advance, was once again showing signs of life. Men were moving here and there in twos and threes and in groups. Rows of wagons and limbers were parked under the trees, and Whippet

tanks hung over with netting were met with now and again. An occasional shell would explode in the city, generally in the neighbourhood of the main railway station, around which several acres of houses had been destroyed. Otherwise the buildings had not suffered greatly; many were pocked by bullets, some had shell-holes through their walls, and most had their windows shattered; yet not one in a hundred had been destroyed, and the cathedral stood intact with a shell-hole or two through its roof.

Eastwards of Amiens all was exceedingly quiet; few men were seen, few guns, no tanks; yet thousands of troops were in position ready to spring forward at the appointed hour.

On my return, having little to do, I worked out a rough chart of the frontages of attack, and include them here, as



I think they are of some interest. From the chart it will be seen that the initial frontage of attack was 22,500 yards, and the final frontage 30,000 yards; that is about 17 miles. The number of Divisions attacking was ten; therefore the average frontage of a Division varied from 2,250 to 3,000 yards, and as the total fighting tanks to be launched was 324, the frontage per tank worked out at from 70 to 90 yards. The whole was, in fact, far too condensed; for Divisions could easily have been allotted final frontages of 4,500 yards, and one tank to every 120 yards would have been ample. Had this been done three Divisions and two Battalions of tanks could have been kept in reserve. But, as I have already pointed out, because there was no initial plan, distributions were doled out in maximums.

Early on the 8th I was up; the morning was misty and dry, and except that at 4.20 a.m. it was still very dark, conditions were ideal for an attack. I waited in the G.S. office, and soon messages began to come in. Most were dropped by aeroplanes, and I will not attempt to patch them together here, but instead will give a very brief summary of the day's operations.

First of all the attack came as an overwhelming surprise; it swept irresistibly on to a depth of some 14,000 yards. On the IIIrd Corps front there was a considerable amount of confusion owing to the fog and the uncertain state of the line; for the enemy had launched an attack on this front on the 6th, and a counter-attack had taken place on the 7th. But south of the River Somme all objectives were taken to time. Both Whippet Battalions were engaged, but instead of being assisted were impeded by the cavalry; for though in the approach march the horsemen moved faster than the tanks, directly fire had to be faced, the cavalry were unable to keep up, and consequently touch with the tanks was lost. The result was that as the tanks had been given no objectives, they became little more than armoured guerrillas roaming about under no

definite orders. And the truth is that though fantastic reports were received of cavalry attacks in Rosières and in and around Chaulnes, very few crossed the Blue Line on the 8th; yet by lagging behind the infantry they undoubtedly were able to herd together large numbers of prisoners, the "capture" of whom was placed to their credit. Then when, long before dusk, the cavalry retired, and in some cases almost to our original front line, to water their horses, orders were sent to the Whippet tanks to retire with them!

From what I heard then and what I saw of the battlefield on the following day, I am convinced that had the 3rd and 6th Tank Battalions been followed by a Brigade of Infantry mounted in lorries or buses, it would have been possible to have occupied the high ground about Lihons and Chaulnes on the evening of the 8th. Had this been done, the whole of the German railway communications within the salient would have been blocked, and it is certain that with the loss of Chaulnes the German front opposing the First French Army would have fallen back.

Two incidents in the battle, both small in their way, support this contention. The first was the action of the 17th Tank Armoured-car Battalion, and the second the action of a single Whippet machine, which, becoming detached from the cavalry, carried out a raid on its own.

As regards the 17th Battalion, then under the command of Colonel E. J. Carter, it moved out of Villers-Bretonneux accompanied by a section of Whippet tanks to assist its machines over the shell-holes. From Warfusée-Abancourt it moved forward on its own and entered Foucaucourt, some four miles east of the Blue Line, and there surprising a German Corps Headquarters, it inflicted many casualties and threw the enemy into panic. Whilst confusion reigned, several Sections of armoured cars turned north and south off the Amiens-Brie road. The former met large columns of transport, which were fired on at short range. Then another Corps Headquarters was reached,



Canadian Official Photographic

CANADIANS RETURNING FROM TRAINING, JUNE 12TH, 1918.



NEAR WARFUSEFI-ABANCOURT, AUGUST 8TH, 1918

and the Australian Corps' flag, which had been carried in one of the cars, was run up over the house which, a few minutes before, had been occupied by the German Corps Commander. The cars then moved on to Proyart and Chuignolles. At the former they found the German troops at dinner; these they shot up and scattered in all directions, and then moving westwards, they met masses of the enemy driven from their trenches by the Australians. "In order to surprise these men . . . the cars hid in the outskirts of Proyart, and, when the enemy was between fifty and one hundred yards distant, they rapidly moved forward, shooting down great numbers. Scattering from before the cars at Proyart, the enemy made across country towards Chuignolles, only to be met by the cars which had proceeded to this village, and were once again fired on and dispersed. . . ." ¹

The second incident is equally dramatic, but I have not space to give it in full. "Musical Box" was a Whippet tank belonging to B Company of the 6th Battalion, and was commanded by Lieutenant C. B. Arnold. On the morning of the 8th it passed through the 2nd Australian Division, moved on parallel with the Amiens-Ham railway and got detached from the cavalry it was co-operating with. Its first adventure was between Warfusée-Abancourt and Bayonvillers, where it attacked a German battery in rear and put it out of action. It then moved on towards Guillaucourt, advanced eastwards along the railway, assisted two cavalry patrols, approached Harbonnières, where it opened fire on a number of the enemy packing kits and killed and wounded some sixty of them. Next, at ranges from 200 to 600 yards, it fired on lines of retiring enemy, and later on again at similar targets, inflicting heavy casualties. Lastly, it fired on columns of enemy transport and eventually was put out of action by catching fire.

The confusion occasioned during these two actions, that

¹ *Tanks in the Great War*, Colonel J. F. C. Fuller, p. 292. (Murray.)

of a few armoured cars and that of one Whippet tank, must have been phenomenal. Consequently, if this confusion is multiplied by the number of Whippet machines used on the 8th, and is concentrated in an area with Chaulnes as its centre, it is certainly no exaggeration to suppose that it would completely have ruined the whole of the German command and administration in the Salient, that is from Albert to Montdidier and from Montdidier to Noyon, a front of some fifty miles. Pictured otherwise: the initial attack may be compared to a harpoon, and the Whippet operation about Chaulnes to the explosive charge fired once the harpoon has penetrated.

To return from these speculations to the battle. By nightfall our front line of attack from north to south ran approximately as follows: along the outer Amiens defence line to west of Proyart—west of Vauvillers—west of Rosières—west of Vrély to the Amiens—Roye road west of Le Quesnel. In other words, one of the most remarkable of advances had been made, for not only had practically all three objectives on the Australian and Canadian fronts been taken, but the leading troops were in places in advance of the third objective, and east of Harbonnières were, as the crow flies, not more than three and a half miles from Lihons and five from Chaulnes.

Had the attack come to an end on the night of the 8th, though the battle would not technically have been so perfect as that of Hamel, as a limited operation it would have fulfilled its object, for all objectives had been occupied except those on the two flanks. On the left, the IIIrd Corps' attack appears to have been muddled, and the result was that the Chipilly spur and the ground immediately north of it remained in German hands. This was unfortunate, because from that spur observation could be maintained over nearly the whole of the Australian Corps' area, with the result that accurate artillery fire was directed on it, which in its turn led to a heavy loss in tanks. On the right, the French attack not having progressed so rapidly as

our own, the right flank of the Canadian Corps had been held back, and this resulted in Le Quesnel remaining in German hands—a matter of no great importance. Unfortunately, however, though the battle had been organised for a limited one-day's attack, its object (pushing on to Chaulnes in order to open the road for the advance of the French between Noyon and Montdidier) demanded at least a two-days' operation, and without a reserve of tanks this meant that the attack would have to be carried out by either infantry alone, or infantry and such tanks as had survived the first day's fighting, and after they had been reorganised and refuelled. With the tanks which we then had, this was no easy matter, because it was not the tank itself which was the crucial factor, but the crew, which after a heavy day's fighting was completely exhausted, and not fit to go into action again until after a twenty-four hours' rest. Had there been on the field a fresh force of infantry and tanks, then undoubtedly Chaulnes would have been ours by midday on the 9th. As this was not so the best had to be done with whatever remained in hand. Nevertheless, 145 tanks went into action this day; yet the line of attack was advanced no farther than Bouchoir—Warvillers—Rosières—Framerville—Méricourt, a matter of about two miles.

Whilst this attack was in progress, having very little to do at Advanced Headquarters, I decided to visit the front and see what conditions were actually like. I motored to Amiens and then on to Villers-Bretonneux, Marcelcave, Lamotte, Bayonvillers, Harbonnières, Guillaucourt, Wien-court and back, visiting the Headquarters of the 3rd, 4th and 5th Tank Brigades on the way. What struck me most was the comparative stillness of the battlefield, that the dead were remarkably few in number, most being Germans, but that many horses had been killed. Near Bayonvillers I came across a tragic row of Mark V One Star tanks, all of which as they had topped a slight rise had been hit by a battery of field guns, much as at Flesquières. I passed

many deserted batteries of medium guns, none of which would thunder on Amiens again, and at Harbonnières ran into an engagement of a peculiar kind. The road was crammed with men and transport, and everyone was firing into the air at a solitary German aeroplane, which was being pursued by twenty-two of our machines. The fusillade was terrific, and in the middle of it the German suddenly dived so steeply that I was certain he had been hit. Then of a sudden he flattened out, and no more than 300 feet above the ground he roared over our heads and sped eastwards. What eventually happened to him I do not know, but I hope he got safely home; he certainly deserved to after such odds against him.

On my return I had a long talk with Elles, and suggested that he should persuade the Fourth Army as soon as possible to close the battle down, as it was fast developing into a costly clinch. He agreed with me, and the events of the 10th proved that we were right, for during that day we were able to bring only sixty-seven machines into action, and little of any real value was accomplished; besides, we were now moving on to the old Somme battlefield, which was difficult for tanks, as it was pocked with shell-holes and cut up by innumerable derelict trenches.

That evening and on the following morning I made out a preliminary report on the battle, so far as it had then been fought, as I intended that afternoon to leave for Bermicourt on my way back to England. This report dealt with suggestions, and not with incidents which were only then beginning to be reported. Parts of it are worth quoting, as they tend to make clear the tactics of this battle.

After pointing out the changes which had occurred in the plan, I wrote:

“ On account of the lack of reserves it was found impossible to maintain a sound tactical organisation after the first day. With unlimited or distant objectives it is essential, if fighting is to be effective, to keep a strong reserve in

hand, so that a continuous *roulement* of units may be kept up.

“Infantry Commanders do not yet appreciate the exhaustive nature of tank fighting. . . . The taxi-cab system of using tanks, that is, of whistling them up whenever required, is still constantly used—and it is absolutely wrong. . . . In limited operations, when the depth of the objective does not exceed eight or ten miles, it is right to get every ounce out of the crews; but this is not the case when objectives are more distant.

“It must be definitely hammered into Infantry Commanders that the rôle of the heavy tank is to break through the enemy defences—trenches and wire, and that it is not to lead the infantry attack across extensive areas of open ground.

“From a tank point of view the enemy’s artillery begins to become dangerous only when his trenches have been penetrated. It is after this act has been accomplished that tanks expect to receive protection from the infantry themselves. The present operation has pointed to the necessity of tanks being preceded by infantry scouts, so that hostile guns may be engaged with rifle fire, and so silenced before they are able to bring fire to bear on the tanks.

“The use of smoke and of aeroplane counter-artillery work should be looked upon as a purely subsidiary means of defence; for the main defence is the infantry riflemen and machine gunners; for they can see much better than the men in the tanks, and to gun fire the infantry offer an insignificant target.

“Briefly, the duty of the tank is to silence the enemy’s machine guns so that the infantry may continue their advance. Equally is it the duty of the infantry to silence the enemy’s guns, so that the tanks may not be knocked out. This form of co-operation has not yet been cultivated. . . .

“Should the enemy resort to combined artillery and machine-gun groups (a small detachment of men possessing equal power to deal with infantry or tanks), it may be necessary to modify tank and infantry tactics as follows:

“ (1) A small advanced guard of Medium A tanks operating ahead, followed by infantry sharpshooters and automatic riflemen.

“ (2) Heavy tanks following in rear of the sharpshooters.

“ (3) Infantry supports and reserves following these tanks.

“ The Medium A has a better chance of avoiding gun fire than the heavy tank. Its increased mobility enables it to manœuvre on the flanks of the guns, and so force these to switch and offer good targets to the sharpshooters.

“ The points to impress upon the infantry are:

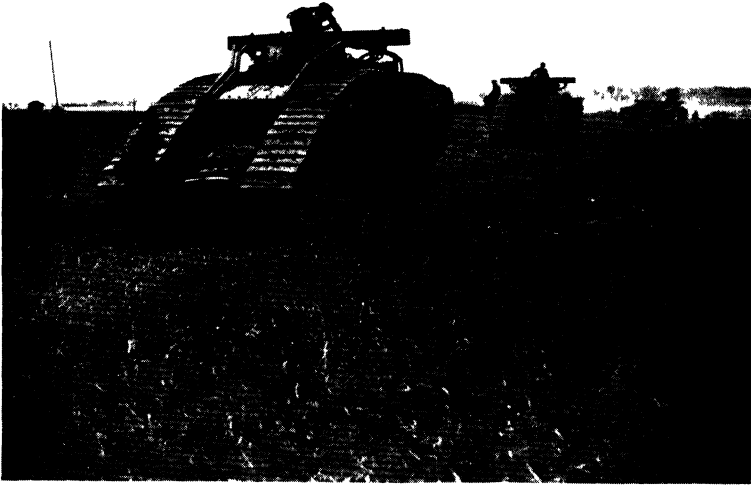
“ (1) That an attack against trenches is an assault carried out by a super-strong firing line; consequently, tanks are used in great strength from the start.

“ (2) That the attack in open warfare is a co-operative piece of work, depending on depth as its driving force; consequently, tanks should as far as possible be kept in *local* reserve until required for action.

“ Since the battle of Cambrai there has been but one system of tank and infantry attack. Though this system has succeeded, its success will diminish unless changed. There is at present a danger of the tank and infantry attack becoming stereotyped, just as the artillery and infantry attack became in 1916.

“ Tactics must change if surprise is to be obtained, for surprise does not merely mean hitting the enemy at some unexpected point, but also hitting him in an unexpected way. Further than this, by next year tanks of an increased efficiency will be produced, and we do not want to hamper these new machines by expecting them to operate on lines which have proved efficient for less powerful machines.

“ The present operations have once again shown that cavalry have no place on the modern battlefield. By noon on August 8 a gap on a wide front had been made, and, in spite of this, during the whole of that day and most of the following, except in one or two places, cavalry were operating behind the infantry. They may have given the in-



Canadian Official Photograph

MARK V TANKS GOING INTO ACTION, AUGUST 10TH, 1918.



MEDIUM A TANKS ADVANCING THROUGH THE MORNING MIST, AUGUST 24TH, 1918.

fantry some moral support, but material support was negligible. There can be little doubt that the Medium A tanks were greatly hampered by attempting to co-operate with cavalry; the chief reason being that cavalry, even if dismounted, offer vulnerable targets to both close and distant machine-gun fire. On many occasions when cavalry were hung up it was necessary for the Whippet tanks to proceed considerable distances in advance in order to silence hostile machine guns. Once these guns had been silenced, these machines had to go back and inform the cavalry to push on. Meanwhile other machine guns opened fire and the Whippets had to return to silence these and then go back again. There can be little doubt that far greater effect would have been obtained had lightly equipped infantry been attached to the tanks in place of asking them to co-operate with cavalry.

“ The one great difficulty is for cavalrymen to shield themselves by ground. Infantry can lie flat and vanish from sight, cavalry cannot. Consequently, infantry can work close up, whilst cavalry are forced to remain at a distance.

“ The true rôle of the Whippet tank is that of mechanical cavalry working according to plan and unhampered by any attempt at close co-operation with either cavalry or infantry.

“ On the afternoon of August 8 all roads leading to the Somme were blocked by the enemy in full retreat. Here was the opportunity for Whippet action. Small squadrons of these machines might well have advanced six or seven miles in front of the infantry attackers, and have shot down the enemy and have completely blocked his communications. The result of this would have been not only a heavier enemy casualty list, but the possibility of pushing on our own infantry more rapidly on the days following the attack.”

This report finished, I said good-bye to Advanced Headquarters and motored over to Bermicourt, where I spent the night, and on the following day I was back in England.

For me active work was at an end, but as the war was

to continue for exactly another three months, I may as well here bring its operations to a conclusion. The battle of Amiens, which was to prove the most decisive fought on the Western Front, was wisely closed down on the 17th. On the 8th, 9th, 10th and 11th, 688 tanks had been in action. A tremendous blow had been dealt the enemy, for not only had he lost 22,000 prisoners and 400 guns, but also all hope of winning the war by force of arms. On the 21st another battle was launched—the second battle of Arras, which died out on September 3. Then a series of battles followed between September 18 and October 10, including the battles of Épehy and Cambrai–St. Quentin. Lastly another series from October 17 to November 11, including the battles of the Selle and of Maubeuge.

Though never again was such a battle as that of August 8 to be fought, the technique of preparing tank attacks became so perfect, that it was possible to mount a battle at a few days' notice, and in consequence shift tank forces from place to place; in fact, to carry out a continuous battle of tank raids, thrust-and-retire operations, which through their paralysing effect on the enemy maintained for us an unbroken and general advance. Curiously, the result was the very reverse from what we had contemplated earlier in the year. Then we had asked for raids, tank assaults of a limited character, in order to stop the enemy moving; now we indulged in them in order to maintain our own movement forward. When, in the year 773, Charlemagne and his armoured host entered Italy, in their dismay had the citizens of Pavia cried: "Iron, iron everywhere!" So now in France, which Charlemagne had once ruled, "iron filled the fields and the ways, and the sun's rays were in every quarter reflected from iron." Not that we had vast numbers of tanks, for, indeed, we had very few; but because their invincible might sank deep into the moral fibres of our enemy. Iron fashioned into the tank had crushed out his

fighting spirit and had paralysed his will to endure. Morally the tank disarmed him and cashiered him from the ranks of the brave. What could a soldier in a woollen jacket do against a soldier girt about with bullet-proof steel? Had I realised this then as fully as I do now, I should have saved myself three desperate months of work, and unprofitable work at that. The battle of Amiens was the strategical end of the war, a second Waterloo; the rest was minor tactics.

CHAPTER XIII

PLAN 1919

THE reason I left France for the War Office was to assist the Imperial General Staff in doubling the Tank Corps. And in turn the reason for this was to bring the war to an end in 1919; for, in August, no one, so far as I am aware, imagined that it would be over before winter set in. Had it continued, I am convinced that the tank would, in the summer of 1919, have brought it to an abrupt conclusion, not by means of the battering-ram tactics of Cambrai, of Hamel and of Amiens, but by applying totally novel tactics, the development of which, cold though it may appear to the reader, was, in fact, full of excitement.

First, it must be realised that as the Tank Corps had no tactical past, it was compelled to think in terms of a tactical future. Also must it be realised that as G.H.Q. was anchored to the past, it was incapable of thinking outside ancient tactics. Next it must be realised that the thinking out of the tank future was in the main carried out by two men: General Capper in England and myself in France. As he had to deal with the War Office, I, in my turn, had to deal with G.H.Q. Eventually he won his fight; yet, as fortune dictated, it was my idea of how the war should be won which was accepted, and to a great extent because he accepted it himself.

Long before this, in fact right back in the early days of the tank, the idea of a mechanised army had taken form. Martel certainly grasped its value in the spring of 1917, and so did Sir Eustace H. T. d'Eyncourt, who, on December 10, 1917, suggested to the General Staff (the War Office) the formation of three tank armies, each consisting of 500 tanks and about 100,000 men. He pointed out, and quite

rightly, that, "Had an additional tank army been available at Cambrai, a really decisive victory would have been gained." Reckoning that "one tank in attack is probably equal to 400 infantry," 500 tanks would be equal to 200,000 men; "thus a tank army of only 100,000" would be "equal to an ordinary army of nearly 300,000."

This was altogether too much for the C.I.G.S.—Sir William Robertson—for in his reply of December 28 he said: "It would not be practicable . . . permanently to organise a special army round the tanks any more than round the artillery . . ." ¹ and that "In the present state of British man-power and the depleted condition of our infantry units on the Western Front, it would not pay us to exceed the establishment which has recently been approved for the Tank Corps. . . ." an establishment which a few months later Sir Douglas Haig did his utmost to reduce.

Bunkered in England and France, I much doubt whether anything could have happened had not the Military Representatives of the Supreme War Council stepped into the tank arena. On January 9, 1918, Generals Weygand, Henry Wilson and Cadorna asked the Supreme War Council to determine the tank policy and strategy of the future. Whether or not this led to the next step I do not know; but, on January 21, General Capper placed before the C.I.G.S. a long detailed paper entitled "Proposals for use of Tanks in the Campaign of 1919." In it he suggested that Great Britain and France should raise a combined tank force of 8,308 machines and 110,550 officers and men.

Either the first or both of these papers, at the time quite unknown to myself, introduced me to the turmoil, for, on the 26th, as I have mentioned, Lord Derby selected me as

¹ This was a most extraordinary objection, seeing that the tank is a mobile arm, an arm which can fight whilst in movement, whilst the gun, at this date, was essentially a static weapon. In spite of this, so much was the offensive power of infantry reduced during the war that, until the tank was invented, infantry tactics were entirely dependent upon gun fire. As early as 1915 the French General Staff said: "Artillery conquers, infantry occupies."

British Representative on the proposed Inter-Allied Tank Committee. Though Mr. Churchill agreed, a paper war of some three dozen letters, and as many minutes, was fought over my unfortunate self. Then at length, to Mr. Churchill's disgust, G.H.Q. won it, and General Capper took my place at Versailles. In actual fact the Commander-in-Chief's objection was a valid one, for his opinion was that I should not be able to represent *his* views!

Whilst this fatuous ink-and-paper fight was bankrupting the Stationery Office, Sir Henry Wilson tackled the War Cabinet, and, two days before the Germans attacked us in March, he pointed out that the artillery-infantry attacks of the past were unlikely to lead to a decision, and that our "experiment" at Cambrai was the only one which would. Then he took Messines as the most successful example of the old tactics and compared it with Cambrai. In the one, as he pointed out, we attacked with twelve Divisions on a front of 16,500 yards, penetrated 4,500 yards, and during the first forty-eight hours lost 16,000 men; whilst in the other, seven Divisions attacked, the front was 13,500 yards, the penetration 9,000 yards, and our losses in the first forty-eight hours 9,500. These figures and others I had given to him on the 14th.

Next, on April 17, General Capper's plan was forwarded to the British Representative, Supreme War Council, and a month later, on May 20, G.H.Q. was approached on this question, but without any result whatsoever, for, at the moment, Sir Douglas Haig was not interested in increasing tanks—rather, as we have seen, in reducing them. This did not deter Sir Henry Wilson approving the following policy on the 28th: Preparations were to be made for a possible offensive about June 1, 1919, with the co-operation of tanks on a large scale. For this purpose the General Staff was to work out the requirements for attack on frontages from 40,000 yards upwards, by 10,000-yard increases of frontage, to 100,000 yards. The general idea of the attack was to be based on a break-through with fighting

tanks accompanied by a force of infantry in carriers. These were to hold the ground gained until the remainder of the infantry on foot arrived. The supply tanks would then be used to bring up supplies, so that another advance could be made. The essence of this operation was that there should be but the shortest of pauses between each advance.

Lastly, on June 4, the Military Representatives of the Supreme War Council came to the conclusion: "That the chances of success in 1919 will be considerably increased if the Allied Armies have at their disposal a large number of tanks."

This brings what may be called the "Capper Period" of the 1919 preparations to an end.

Ideas are frequently stillborn, but they are seldom or ever spontaneously generated. Either they are the mental effect of some outward cause or the children of reflection. Earlier in these memoirs I have mentioned Townshend's "Study in Red Ink": that was my tank starting-point. It led me to realise that the tank was, in spite of its crudeness, the superior weapon, and as such I accepted it when, towards the end of 1916, I joined the Heavy Branch. Then, in my paper of June 11, 1917, by making use of salients on the flankless Western Front, I began to turn from the purely frontal attack to the possibilities of flanking operations, and a little later on to a definite rear attack effected by depositing groups of machine gunners in rear of the enemy's fighting front in order to cut its garrisons off from their reserves. The next step was a simple though a highly dramatic one—it was to cut an entire army or group of armies off from its command. The argument was a perfectly logical one, namely as a Government depends for its power on the national will, so does an army depend for its power on the will of its Commander and his Staff: cut that will off, and the army will be paralysed.

Though of slow development, this idea suddenly flashed across my mind during our debacle in March. What did

I then see? Tens of thousands of our men being pulled back by their panic-stricken Headquarters. I saw Army Headquarters retiring, then Corps, next Divisional and lastly Brigade. I saw the intimate connection between will and action, and that action without will loses all co-ordination: that without an active and directive brain, an army is reduced to a mob. Then I realised that if this idea could be rationalised—by which I mean taken out of the realms of chaos and digested scientifically—a new tactics could be evolved, which would enable a comparatively small tank army to fight battles like Issus and Arbela over again. What was the secret of these engagements? It was that whilst Alexander's phalanx held the enemy's battle body in a clinch, he and his Companion Cavalry struck at the enemy's will, concentrated as it was in the person of Darius. Once this will was paralysed, the body became inarticulate.

On May 24 I elaborated this idea in "Plan 1919," which, like so many of my tactical papers, was a kind of military novelette. Here I will give it almost word for word as it was written, condensing it only in a few places, and improving on its hasty grammar. Later on I rewrote it in clearer form; yet here, I think, it is more honest to quote the first edition; for it was this edition which was considered by Sir Henry Wilson, General Harington, Mr. Churchill and others at the time. It reads as follows:

"(1) *The Influence of Tanks on Tactics*: Tactics, or the art of moving armed men on the battlefield, change according to the weapons used and the means of transportation. Each new or improved weapon or method of movement demands a corresponding change in the art of war, and to-day the introduction of the tank entirely revolutionises this art in that:

"(i) It increases mobility by replacing muscular by mechanical power.

"(ii) It increases security by using armour plate to cut out the bullet.

“(iii) It increases offensive power by relieving the soldier from having to carry his weapons, and the horse from having to haul them, and it multiplies the destructive power of weapons by increasing ammunition supply.

“Consequently, petrol enables an army to obtain greater effect from its weapons, in a given time and with less loss to itself than an army which relies upon muscular energy. Whilst securing a man dynamically, it enables him to fight statically¹; consequently, it superimposes naval upon land tactics; that is, it enables men to discharge their weapons from a moving platform protected by a fixed shield.

“(2) *The Influence of Tanks on Strategy*: Strategy is woven upon communications; hitherto upon roads, railways, rivers and canals. To-day the introduction of a cross-country petrol-driven machine, tank or tractor, has expanded communications to include at least 75 per cent. of the theatre of war over and above communications as we at present know them. The possibility to-day of maintaining supply and of moving weapons and munitions over the open, irrespective of roads and without the limiting factor of animal endurance, introduces an entirely new problem in the history of war. At the moment he who grasps the full meaning of this change, namely, that the earth has now become as easily traversable as the sea, multiplies his chances of victory to an almost unlimited extent. Every principle of war becomes easy to apply if movement can be accelerated and accelerated at the expense of the opposing side. To-day, to pit an overland mechanically moving army against one relying on roads, rails and muscular energy is to pit a fleet of modern

¹ Hitherto minor tactics have been faced by two great difficulties:

(i) How to harmonise movement and fire, the rifleman not being able to move whilst firing or to fire whilst moving. To-day, by placing him in a bullet-proof petrol-driven car, he is able to concentrate the whole of his muscular energy on the manipulation of his weapons, whilst simultaneously being moved forward by mechanical means.

(ii) How to harmonise movement and security, the rifle not being able to cover his advance by fire when in movement. To-day bullet-proof armour enables him to concentrate all his energy upon hitting his adversary in place of dividing it between hitting and securing himself against being hit. Petrol, to all intents and purposes, introduces a new dimension, for it enables a hitherto unobtainable direction in fighting to be followed—the moving protected firing line.

battleships against one of wind-driven three-deckers. The result of such an action is not even within the possibilities of doubt; the latter will for a certainty be destroyed, for the highest form of machinery must win, because it saves time and time is the controlling factor in war.

“(3) *The Present Tank Tactical Theory*: Up to the present the theory of the tactical employment of tanks has been based on trying to harmonise their powers with existing methods of fighting, that is, with infantry and artillery tactics. In fact, the tank idea, which carries with it a revolution in the methods of waging war, has been grafted on to a system it is destined to destroy, in place of being given free scope to develop on its own lines. This has been unavoidable, because of the novelty of the idea, the uncertainty of the machine and ignorance in its use.

“Knowledge can best be gained by practical experience, and at first this experience is difficult to obtain unless the new idea is grafted to the old system of war. Nevertheless, it behoves us not to forget that the tank (a weapon as different from those which preceded it as the armoured knight was from the unarmoured infantry who preceded him) will eventually, as perfection is gained and numbers are increased, demand a fundamental change in our tactical theory of battle.

“The facts upon which this theory is based are now rapidly changing, and unless it changes with them, we shall not develop to the full the powers of the new machine; that is, the possibility of moving rapidly in all directions with comparative immunity to small-arm fire.

“From this we can deduce the all-important fact that infantry, as at present equipped, will become first a subsidiary and later on a useless arm on all ground over which tanks can move. This fact alone revolutionises our present conception of war, and introduces a new epoch in tactics.

“(4) *The Strategical Objective*: Irrespective of the arm employed, the principles of strategy remain immutable, changes in weapons affecting their application only. The first of all strategical principles is ‘the principle of the object,’ the object being ‘the destruction of the enemy’s

fighting strength.' This can be accomplished in several ways, the normal being the destruction of the enemy's field armies—his fighting personnel.

" Now, the potential fighting strength of a body of men lies in its organisation; consequently, if we can destroy this organisation, we shall destroy its fighting strength and so have gained our object.

" There are two ways of destroying an organisation:

" (i) By wearing it down (dissipating it).

" (ii) By rendering it inoperative (unhinging it).

" In war the first comprises the killing, wounding, capturing and disarming of the enemy's soldiers—body warfare. The second, the rendering inoperative of his power of command—brain warfare. Taking a single man as an example: the first method may be compared to a succession of slight wounds which will eventually cause him to bleed to death; the second—a shot through the brain.

" The brains of an army are its Staff—Army, Corps and Divisional Headquarters. Could we suddenly remove these from an extensive sector of the German front, the collapse of the personnel they control would be a mere matter of hours, even if only slight opposition were put up against it. Even if we put up no opposition at all, but in addition to the shot through the brain we fire a second shot through the stomach, that is, we dislocate the enemy's supply system behind his protective front, his men will starve to death or scatter.

" Our present theory, based on our present weapons, weapons of limited range of action, has been one of attaining our strategical object by brute force; that is, the wearing away of the enemy's muscles, bone and blood. To accomplish this rapidly with tanks will demand many thousands of these machines, and there is little likelihood of our obtaining the requisite number by next year; therefore let us search for some other means, always remembering that probably, at no time in the history of war, has a difficulty arisen the solution of which has not at the time in question existed in some man's head, and frequently in those of several. The main difficulty has nearly always

lurked, not in the solution itself, but in its acceptance by those who have vested interests in the existing methods.

“As our present theory is to destroy ‘personnel,’ so should our new theory be to destroy ‘command,’ not after the enemy’s personnel has been disorganised, but before it has been attacked, so that it may be found in a state of complete disorganisation when attacked. Here we have the highest application of the principle of surprise—surprise by novelty of action, or the impossibility of establishing security even when the unexpected has become the commonplace.

“Compared to fighting men there are but a few Commanders in the field; therefore the means required to destroy these Commanders will be far less than those normally required to destroy the men they control.

“It is no longer a question of: Had Napoleon possessed a section of machine guns at Waterloo, would he not have won that battle? But: Had he been able to kidnap or kill the Duke of Wellington and his Staff at 9 a.m. on June 18, 1815, would he not have done equally well without firing a shot? Would not the sudden loss of command in the British Army have reduced it to such a state of disorganisation that, when he did advance, he would have been able to walk through it?

“It is not my intention in this paper to deprecate the use of brute force, but to show that much brute energy and loss of brute energy may be saved and prevented if we make use of the highest brain-power at our disposal in applying it.

“(5) *The Suggested Solution:* In order to render inoperative the Command of the German forces on any given front, what are the requirements?

“From the German front line the average distance to nine of their Army Headquarters is eighteen miles; to three Army Group Headquarters forty-five miles; and the distance away of their Western G.H.Q. is one hundred miles. For purposes of illustration the eighteen-mile belt or zone containing Army, Corps and Divisional Headquarters will prove sufficient.

“Before reaching these Headquarters elaborate systems

of trenches and wire entanglements, protected by every known type of missile-throwing weapon, have to be crossed.

“ To penetrate or avoid this belt of resistance, which may be compared to a shield protecting the system of command, two types of weapons suggest themselves:

“ (i) The aeroplane.

“ (ii) The tank.

“ The first is able to surmount all obstacles; the second to traverse most.

“ The difficulties in using the first are very great; for even if landing-grounds can be found close to the various Headquarters, once the men are landed, they are no better armed than the men they will meet; in fact, they may be compared to dismounted cavalry facing infantry.

“ The difficulties of the second are merely relative. At present we do not possess a tank capable of carrying out the work satisfactorily, yet this is no reason why we should not have one nine months hence if all energies are devoted to design and production. The idea of such a tank exists, and it has already been considered by many good brains; it is known as the ‘ Medium D tank,’ and its specifications are as follows:

“ (i) To move at a maximum speed of 20 miles an hour.

“ (ii) To possess a circuit of action of 150 to 200 miles.

“ (iii) To be able to cross a 13- to 14-foot gap.

“ (iv) To be sufficiently light to cross ordinary road, river and canal bridges.

“ (6) *The Tactics of the Medium D Tank:* The tactics of the Medium D tank are based on the principles of movement and surprise, its tactical object being to accentuate surprise by movement, not so much through rapidity as by creating unexpected situations. We must never do what the enemy expects us to do; instead, we must mislead him, that is, control his brain by our own. We must suggest to him the probability of certain actions, and then, when action is demanded, we must develop it in a way diametrically opposite to the one we have suggested through our preparations.

“ Thus, in the past, when we massed men and guns opposite a given sector, he did the same and frustrated our

attack by making his own defences so strong that we could not break through them, or if we did, were then too exhausted to exploit our initial success. At the battle of Cambrai, when our normal method was set aside, our blow could not be taken advantage of, because the forces which broke through were not powerful enough to cause more than local disorganisation. The enemy's strength was not in his front line, but in rear of it; we could not, in the circumstances which we and not he had created, disorganise his reserves. Reserves are the capital of victory.

“ A study of Napoleon's tactics will show us that the first step he took in battle was not to break his enemy's front, and then when his forces were disorganised risk being hit by the enemy's reserves; but instead to draw the enemy's reserves into the fire fight, and directly they were drawn in to break through them or envelop them. Once this was done, security was gained; consequently, a pursuit could be carried out, a pursuit being more often than not initiated by troops disorganised by victory against troops disorganised by defeat.

“ Before the third battle of Ypres [Passchendaele] began, we had drawn in large forces of the enemy's reserves; this, judged by the Napoleonic standard, was correct. Where we failed was, that once we had drawn them in we had no old guard at hand to smash them. At the battle of Cambrai we struck with our old guard (tanks) before the German reserves were on the battlefield. It was a blow in the air, and the result was that we crashed through the enemy's front and then, when his organised reserves were brought up, having no old guard to meet them, the tactical advantage was theirs and not ours—we were repulsed.

“ Tactical success in war is generally gained by pitting an organised force against a disorganised one. This is the secret of Napoleon's success. At Ypres we had not the means to disorganise the enemy; at Cambrai the enemy did not offer us the opportunity to disorganise him; both battles were conceived on fundamentally unsound tactical premises. What we want to aim at now is a combination of these two ideas:

“ (i) To force the enemy to mass his reserves in a given sector.

“ (ii) To disorganise these reserves *before* we break through them.

“ This done, pursuit, the tactical act of annihilation, becomes possible. Pursuit is the dividend of victory; the more reserves we force the enemy to mass, so long as we disorganise them, the greater will be the tactical interest on our capital. With the Medium D tank and the aeroplane there is no reason why we should not receive one hundred per cent. interest upon our investments. This represents winning the war in a single battle.

“ (7) *The Medium D Tank Battle*: A battle based on the powers of the Medium D tank may in brief be outlined as follows:

“ A frontage of attack of some ninety miles should be selected, and on this frontage, by the inducement of visible preparation some four or five German armies collected. Then the area lying between the lines connecting up the German Army Headquarters and those linking their Divisional Headquarters will form the zone of the primary tactical objective. Heretofore it has been the area between the enemy's front line and his main gun positions, but this zone will now become the secondary tactical objective. The geographical position of objectives is therefore reversed: the last becomes the first and the first becomes the last. Here is the foundation of surprise.

“ Once preparations are well in hand, without any tactical warning whatsoever, fleets of Medium D tanks should proceed at top speed by day, or possibly by night, directly on to the various Headquarters lying in the primary tactical zone. If by day, these targets can be marked by aeroplanes dropping coloured smoke, and if by night, by dropping coloured lights, or by guns firing coloured light shells. As the longest distance to be covered may be taken as twenty miles, the Medium D tanks should reach the German Army Headquarters in about two hours.

“ Meanwhile every available bombing machine should concentrate on the various supply and road centres. The signal communications should not be destroyed, for it is

important that the confusion resulting from the dual attack carried out by the Medium D tanks and aeroplanes should be circulated by the enemy. Bad news confuses, confusion stimulates panic.

“As soon as orders and counter-orders have been given a little time to become epidemic, a carefully mounted tank, infantry and artillery attack should be launched, the objective of which is the zone of the enemy's guns; namely, the secondary tactical zone some 10,000 yards deep.

“Directly penetration has been effected, pursuit should follow, the pursuing force consisting of all Medium tanks available and lorry-carried infantry. To render this force doubly powerful, it should be preceded by squadrons of Medium D tanks, which will secure all centres of communication, break up hostile Army Group Headquarters and disperse all formed bodies of troops met with. The German Western G.H.Q. should be dealt with by dropping several hundred tons of explosives upon it: that, at least, will neutralise clear thinking.

“(8) *The Morcellated Front of Attack*: A continuous front of attack of ninety miles may seem too extended to be practicable. By a simple tank manœuvre, this front, so far as the attackers are concerned, can be reduced to fifty miles without reducing the total of ninety miles to be disorganised. Diagram 17 illustrates this manœuvre. A-H represents the ninety-miles frontage of attack. Of this frontage the sectors A-B, C-D, E-F and G-H, totalling fifty miles, are to be penetrated by heavy tanks and infantry, and the Sectors B-C, D-E and F-G are to be enveloped. Should a few Medium D tanks be used to co-operate in this envelopment, the confusion created in the sectors B-C, D-E and F-G will probably be sufficient to reduce the resistance of the defenders holding them to such a point that they can easily be dealt with. If this is not thought likely, these flank attacks can be supported by massed frontal artillery fire, or by weak infantry attacks protected by heavy barrages on the old lines.

“(9) *The Effect of the Medium D Tank on Tactics*: The improvement in any one arm, especially an improvement in mobility, will affect the utility and employment of all the

remaining arms in a degree proportionate to the improvement. Taking the various arms—infantry, cavalry, artillery, aircraft, engineers and commissariat—the following deductions can be made:

“ (i) *Infantry*.—Except for gaining the secondary zone, infantry on their feet will be next to useless. They will have to be carried forward in mechanical transport if they are ever to keep up with the pursuit of the Medium D tank, which will advance to a minimum depth of twenty miles a day.

“ The employment of infantry should be on the following lines:

“ (a) To assist in the tactical penetration.

“ (b) To operate in areas unsuited to tanks.

“ (c) To occupy the areas conquered by the tanks.

“ (d) To protect our rear services.

“ After the first blow, the likelihood of infantry having to attack will be reduced; consequently, their chief duty will be to form a mobile protective line in rear of the Medium D tanks, in order to secure the administrative and engineer services from local annoyance. Therefore, their tactics will be defensive, and their chief weapon will be the machine gun.

“ (ii) *Cavalry*.—If cavalry have sufficient endurance to keep up a pursuit of at least twenty miles a day for a period of five to seven days, their value will be considerable, for they will be able to form mounted skirmishing lines between the groups of Medium D tanks, and it may be assumed that even should the entire cavalry force by the end of the seventh day be horseless, after a pursuit of 150 miles the enemy will be reduced to a non-fighting condition.¹

“ (iii) *Artillery*.—The heavy artillery will disappear as a mobile arm after the first day's advance, and will be relegated to its original position in the siege train. The field artillery, if still horse-drawn, will be unable to keep up with the fighting after the second or third day's advance. Field artillery horses must, therefore, be replaced by tractors; this even to-day is becoming a necessity on account

¹ This paragraph was inserted to propitiate the horse worshippers. Tractor-drawn light infantry would have been more effective.

of the difficulty of keeping horses alive on or behind the battlefield.

“(iv) *The Royal Air Force*.—As the mobility of the tank increases, so will it have more and more to rely on the aeroplane for its security and preservation.

“The duties of the R.A.F. will be as follows:

“(a) To act as an advanced guard to the tanks.

“(b) To assist tanks in disorganising the enemy’s Headquarters.

“(c) To guide tanks on to their objectives.

“(d) To protect tanks from hostile gun fire.

“(e) To supply advanced Squadrons of tanks with petrol, ammunition, etc.

“(f) To act as messengers between tanks and their bases.

“(g) To carry tank Brigade Commanders above their sectors of operation, in order that these officers may see what their machines are doing and may handle their reserves accordingly.

“Aeroplanes will bear to tanks a similar relationship as cavalry to infantry in the old days.

“(v) *Royal Engineers*.—The duties of Royal Engineers and Pioneer units will be considerably enlarged. Their work will be confined chiefly to the improvement of communications—roads and rails and the building of bridges. All defence work will be relegated to infantry.

“(vi) *Army Service Corps*.—The mobility of the A.S.C. will be taxed to its utmost. Horses will disappear and road lorries will have to be supplemented by field lorries if the troops are to be adequately supplied. All road lorries should easily be convertible into field lorries by some simple wheel attachment, which will enable them to traverse grass and ploughland.

“The main fact is that the mobility of the Medium D tank will increase the mobility of all the other arms. Draught horses will disappear, and by degrees riding horses as well. Consequently, the more mobile arms will prove the most useful, the less mobile either disappearing from the battlefield or being brought up to the requisite standard of mobility by mechanical means.

“(10) *The Influence of the Medium D Tank on Grand Tactics:* The influence of the mobility of the Medium D tank on grand tactics (the penetration or envelopment of an enemy) is almost beyond appreciation. Penetration of existing defences becomes considerably easier than the old field attack over unentrenched ground; envelopment—a mere matter of leisurely manœuvre.

“Besides these advantages, frontages of attack can be extended out of all former proportion to the strength of the attacking forces, and surprise forms the basis of every action.

“So long as the enemy is unable to meet the Medium D tank by a similar or a superior weapon, all attacks based on its powers will become methodical; that is, they will be carried out according to plan, the disorganisation of the rear services will cease because the initiative will be ours, the enemy's will being subordinate to our own.

“(11) *The Influence of the Medium D Tank on Strategy:* Strategy, or the science of making the most of time for warlike ends, that is of opportunity, will practically cease for that side which pits muscular endurance against mechanical energy.

“The possibility of applying naval tactics to land warfare is an entirely new application of the strategical principles, which at present endow the side which can apply them with incalculable power. Formerly strategy depended on communications, now communications will become universal, and though roads and rails will not disappear, they will become but lines of least resistance to movement in the universal vehicle which the earth's surface will be turned into by all types of cross-country machines.

“Strategically the leading characteristic of the Medium D tank is that it is a time-saver, on account of its high speed, its extensive radius of action and its locomobility—power to move in all directions on a plane surface. Compared to infantry in battle, its speed is ten times as great and its radius of action twenty-five times greater. Its protective power is beyond comparison.

“ The saving of time in battle means the saving of time in manufacture; consequently, the reduction of manpower in production.

“ Time is, however, our enemy; for the only thing to fear now is that we shall not have sufficient time wherein to produce these machines by next year. To use a new machine in driblets is to make the enemy a patentee in the design. To fail to win the war in 1919 through lack of Medium D's is to risk being beaten by a better German machine in 1920. For it must be remembered that as yet no weapon has been produced which time has not rendered obsolete. The number of Medium D tanks required by May 1919 is 2,000, and with this number there is every prospect of ending the war.”

To this long paper I added an appendix containing calculations of the number of tanks required for the attack as outlined in Section (8). The more important of these were as follows:

“ (1) These calculations only take into account the approximate requirements for the Tank Corps, whether British or Allied. They do not include tank transportation for infantry and the other arms.

“ (2) The frontage of operations is 90 to 100 miles, the frontage attacked being 50 miles.

“ (3) Calculations are based on the following premises:

“ (i) *Breaking Force*.—Heavy tanks to break through the entrenched zone (secondary objective) supplemented by Medium D tanks to envelop such parts of the front not attacked and to form offensive flanks.

“ (ii) *Disorganising Force*.—Medium D tanks to disorganise the enemy's Command in rear of the entrenched zone (primary objective).

“ (iii) *Pursuing Force*.—A tank pursuing force composed of all types of Medium tanks.

“ (4) *Breaking Force*.—The Breaking Force to operate in three echelons. In the first two, one heavy tank to

each 100 yards of frontage, in the third, one to every 150 yards:

1st Echelon	880	Heavy tanks.
2nd "	880	" "
3rd "	587	" "
In reserve	245	" "
Total	<u>2,592</u>	" "

Medium D tanks for offensive flanks	130
Medium D tanks for enveloping flanks	<u>260</u>
Total Medium D tanks	<u>390</u>

“(5) *Disorganising Force*.—The following enemy Headquarters to be disorganised:

4 Army H.Q.s, 20 Medium D tanks each	80
16 Group H.Q.s do.	320
70 Divisional H.Q.s, 5 Medium D tanks each	350
2 Army Group H.Q.s, 20 Medium D tanks each	<u>40</u>
Total Medium D tanks	790

“(6) *Pursuing Force*.—The pursuing force to consist of 820 Medium D and 400 Medium C tanks.

“(7) Number of Battalions comprised in the above:

2,592 Heavy tanks =	54 Heavy Battalions.
2,400 Medium tanks =	36 Medium Battalions.

In Brigades this means: 18 Heavy and 12 Medium Brigades.

“(13) A rough estimate of the personnel required may be arrived at by allotting 20 all ranks to each Heavy tank and 10 to each Medium:

2,592 Heavy tanks	51,840	officers and men.
2,400 Medium tanks	24,000	" "
For Subsidiary, Supply, etc.	<u>14,460</u>	" "
Total	90,300	" "

“(14) Battalions might be divided among the Allied Powers as follows:

British	27	Heavy Battalions	9	Medium Battalions.
French	13	" "	13	" "
American	<u>14</u>	" "	<u>14</u>	" "
Total	54	" "	36	" "

“ This would mean that the British Tank Corps would have to be expanded from about 17,000 to 37,000 all ranks.”

Concerning this plan, so far as I am aware, nothing happened until July 1, when General Capper placed a paper entitled “ Armoured Striking Force for 1919 ” before the C.I.G.S.: a paper representing the “ G.S.” edition of my “ Novelette,” in which picturesqueness vanished in arithmetic. This, I think, was unfortunate, for there is nothing which so readily paralyses the soldier as strings of figures. When he is asked, as he was in this paper, for 12,516 tanks, which was obviously more than the Allied Powers could build during the next twelve months, and for a total of 121,000 officers and men, which was at least 33 per cent. below the figure required to man this mass of machines, no great harm was done. But when pages of figures entering into the minutest detail followed, the soldier at once became terrified, and when terror strikes the military mind, relief is automatically found in a Conference in which responsibility is partitioned like a cake in sufficiently small slices to enable all decision to be gobbled up without risk of mental indigestion.

The Conference assembled on July 3. What its actual recommendations were I do not know; but apparently my idea got lost in a maze of figures, and the result was that, later on in the month, a letter was drafted for the C.I.G.S.’s signature to be dispatched to the General Commanding-in-Chief Allied Armies. It dealt with the 1919 offensive numerically and not ideologically. In it it was openly stated that it was “ not necessary to consider the actual method of attack,” which was not very helpful for the recipient.

Then, on the day following this Conference, came Hamel, the Battle of Deliverance, and fortunately this draft letter was set aside, for seemingly this battle so completely electrified the War Office that, on July 6, a second Con-

ference, this time under Sir Henry Wilson himself, was assembled. At it he announced that General Foch was strongly in favour of a tank offensive in 1919, and that a plan was being prepared for him outlining what we could do and what the Allies should do. He mentioned the Hamel operation, and pointed out that its success was entirely due to tanks.

Next, on the 9th, I received a letter from General Harington saying: "Many thanks for the very interesting report you sent me [on Hamel]. This attack has happened at a most useful moment for us. C.I.G.S. tells me that General Foch is strongly in favour of tanks now, so I hope we shall get on, and the outline of our proposals for next year will go to him in a few days with a private letter from C.I.G.S. . . ."

On the 14th, as I have related, I went over to England, and the next day I saw General Harington and impressed upon him the importance, not merely of asking Foch to agree to numbers of tanks, possible or impossible, but to inoculate him with the idea upon which "Plan 1919" was founded. This, I suppose, led to a Conference of the Military Members on the 19th; anyhow, a Conference was held that day to decide upon the letter to General Foch.

Had the war not come to an end when it did, this letter, as finally drafted, would in all probability have become one of its most important strategical documents. Though this was not to be, it still remains historically of interest, for it shows what was passing in the minds of Sir Henry Wilson and General Foch before the great battle of August 8 was fought. In it and the Memorandum attached was outlined a plan for an offensive in 1919, based on the extensive employment of tanks both for fighting and for supply. In it General Foch was urged to obtain the whole-hearted concurrence of the Allied Governments and of their Armies to the scheme and the appointment of a small body of officers representing each Allied Nation to co-ordinate all work in connection with tanks. Further, it was pointed

out that these officers should, so far as possible, have had experience with tanks and should be enthusiasts and firm believers in the possibilities and the future of tank warfare in all its branches.

The "Memorandum on the Requirements for an Armoured Striking Force for an Offensive in 1919" was based on General Capper's paper of July 1, which in turn was based on mine of May 24. The object laid down was as follows: "To strike at the brain of the enemy by attacking his Headquarters and communications and so paralyse his action."

The method then read:

"(i) It is proposed that the front of attack should be 160 kilometres, of which 80 kilometres should be penetrated by the method described below:

"(ii) The principles on which such an attack are based are as follows:

"The brain and stomach of the enemy must be struck concurrently with, or in advance of, the blow at his body. This can only be done by having at our disposal a large number of rapid (Medium) tanks capable of travelling long distances, either themselves large enough to cross the enemy's trench systems without assistance, or crossing them behind the large tanks on bridges laid by the latter. This force is practically Armoured Independent Cavalry, and will be supported as soon as possible by the Cavalry.

"(iii) The main infantry attack, supported by heavy tanks, and numbers of lighter tanks, will crush the resistance of the enemy's force. Large numbers of Heavy and Light Fighting Tanks will be required.

"(iv) To enable the advance to continue rapidly, the whole force must be able to subsist for considerable periods independent of roads and railways. Rapidity of advance is essential to success.

"This necessitates the provision of large numbers of cross-country mechanical vehicles for carriage of stores and ammunition, and for the rapid movement forward of guns. It is generally the failure to supply a victorious

force which brings it to a standstill. The importance of a supply of these vehicles cannot be over-estimated."

Next the battle was outlined as follows:

A night on which there was a good moon in the later hours was to be selected as Z day. Then, at or before daylight, covered by artillery fire and smoke, the main attack by infantry supported by heavy tanks, light tanks and low-flying aeroplanes was to take place and be pressed with the utmost energy, no delay being permitted, even should portions of the battle front be held up.

Coincidental with the main advance, groups of Medium tanks, if necessary assisted by bridge-laying machines, were to proceed far ahead and attack every Divisional, Corps and Army Headquarters located. They were also to destroy all telegraph and wireless communications on their way, whilst other groups were to seize important bridges, cut railways and destroy trains, so that the enemy's advanced troops would be left leaderless, without communications, without supplies and without possibility of reinforcement. Army Headquarters were to be reached within three or four hours of the advance starting, and as the main attack was launched, Squadrons of bombing aeroplanes were to fly forward and keep the enemy's G.H.Q., Army and Corps Headquarters under a continual aerial bombardment.

Behind the main attack was to advance a force of clearing-up troops and cavalry, and behind these the exploiting Divisions, which were to be brought up as fresh as possible, so that the advance might be carried out without pause.

Such, in brief, was the type of battle proposed to General Foch, and the forces required were laid down at twenty-eight Divisions for the main attack, twenty-eight for exploitation, fourteen in reserve and eight Cavalry Divisions. The total number of tanks was calculated at 10,500, and the cross-country tractors for the British quota at 7,296 machines.

It will be seen that in all essentials this plan closely coincided with the one outlined in my Memorandum of May 24; the only important differences being: (1) That I wanted the attack on the primary objective to take place *before* the attack on the secondary objective was launched, and (2) that I did not want telegraphic, etc., communications to be destroyed.

A copy of Sir Henry Wilson's letter and memorandum was also sent to Sir Douglas Haig, who replied on July 28. What his answer was I do not know; but I presume he raised objections, and mainly on the score that the cavalry would have to be reduced in order to find men for the Tank Corps. My reason for supposing this is that, on August 23, he was informed by the War Office that the expansion of the British Tank Corps was going to take place on the lines proposed, and that the cavalry were going to be reduced by Corps Headquarters and one Cavalry Division, if only because of the increasing difficulty of maintaining the supply of horses in France; but that this reduction would not come into force until November 1.

How different was General Foch's reply! He was older than Sir Douglas Haig, and he also had been educated in an equally rigid school of military thought; yet, on August 6, he wrote to Sir Henry Wilson as follows:

"I agree in every way with the main principles of the study you have kindly sent me. . . . Tanks are indispensable for clearing the way, and supporting the rapid advance of the infantry. They must be used in as large numbers as possible; consequently, construction must be hastened. . . ."

Then, two days later, came August 8, which in its own hidden way put an end to all this planning and counter-planning. The tanks outside Amiens not only smashed the German *moral* so completely that, unrealised by us, it was no longer necessary to assess their future, but in smashing it they opened the way for the stubborn will of

Sir Douglas Haig, which from now on to the end in November became the decisive factor in the war.¹

It is indeed strange that this man, whose stubbornness in the offensive had all but ruined us at Ypres, whose stubbornness in the defensive had all but ruined us on the Somme, should, from August onwards, become the driving force of the Allied Armies. Yet this was so, and it must stand to his credit; for no man can deny that, during the last hundred days of the war, his spirit fitted events as a hand fits a glove. Yet to me it is stranger still that these events were created not by him or by his ideas, but by the tank and in no small part by my ideas. The machine which he could not understand, which he instinctively loathed and which he would gladly have abolished altogether, made him one of the outstanding figures of the war. Yet to me, strangest of all is it that I, who considered him, and still consider him, one of if not the most unimaginative and unseeing of Generals who has ever commanded a British Army, a man whose Stone-Age ideas I had fought tooth and nail, should, since December 1916, have played so great a part in this, his apotheosis. It would be incorrect to say that I made the tank, for I fashioned its tactics only; but it is strictly and historically correct to say that the tank made Lord Haig.

¹ There is no intention here of detracting from Foch's credit for launching the attack. Foch records in his *Mémoires* that when he summoned the Allied Commanders-in-Chief to explain his plan for an immediate offensive, Haig's reply was: "The British Army, entirely disorganised by the events of March and April, is still far from being established." On the following day, however, he, in common with the others, whose first reaction had also been of opposition, wrote to Foch accepting in principle.

CHAPTER XIV

YEAST WITHOUT DOUGH

IN August 1918 the War Office was a very different place from what it had been four years earlier. Then it was a combination of club, monastery and office in which etiquette dominated, in which rituals were rigidly observed and in which regulations, however out of date, were laws. Now it was a kind of Epsom Downs; a sprawling gathering of Generals, Colonels, lesser fry, civil servants, experts, accountants, clerks, typists and orderlies, among each class of which were to be found numbers of cold-footed people whose one object in life was, not to win the war, but to keep out of it. Not a few—and this is no exaggeration—would easily have won the V.C. for cowardice had such a decoration existed.

At 10 a.m., on August 1, I joined this ink-slinging fraternity, opening my office, S.D.7, not in the War Office itself, but in the Annexe, otherwise the National Liberal Club and somewhere close under its roof. The view was magnificent, but my prospects were misty in the extreme: actually far more so than I realised at the time; for then I knew nothing about this "War House" and its scholastic ways.

Foot was already in the room awaiting me, and as no papers had arrived we had a talk. He explained that there was no policy, no plan, no co-ordination and no control: that absolute dogmas, ways, means and methods choked every department. That all things new were automatically pinched out by so many things old; because what had been could easily be discovered in books, manuals and files, whilst things new meant taking one's coat off. "Boney," he said, "you know, that here there might just

as well be no war on; nobody knows what is happening, and the worst of it is they are too busy to find out." Then after a pause he added: "As regards tanks, they know nothing at all—very few have seen one."

Though this was not encouraging, it did not depress me, for I knew what I wanted, and if I found that I could not get it, I had no intention of wasting my time picking War Office oakum. I wanted men, accommodation and machines, and a policy concerning their use. I had given up an appointment of such interest that I knew of a certainty that were I to live a hundred years I should never hold another equal to it. I had forgone the rank of Brigadier-General, which would have been mine had I stayed in France, and the increased pay of that appointment. I had elected to come to London, which I disliked, to an office life which I disliked even more, because duty dictated that I should go there.

These things passed through my head as Foot was talking; then, after a pause, I answered: "If these people know nothing, we must teach them. What do you think of the idea of bringing out a weekly tank paper? Shall we call it *Weekly Tank Notes*? You can edit it, and we will circulate it to the General Staff and others. It will probably be read by a few; anyhow, it will show that we are alive."

Such was the origin of the one and only "newspaper" I have so far produced, and its development was so rapid and in a way so remarkable that it warrants a mention; and this I may as well do here and finish with it.

The first number appeared on August 10 and was a very modest little leaflet opening with: "Tank Smoke" (a good beginning!), followed by a summary of the salient points in the tank attacks at Hamel and Moreuil, and ending with a prisoner's statement on German tanks. The last number (No. 78) appeared on February 14, 1920, and its contents were: "Tanks in South Russia"; "Armoured Traction Trains, South African War, 1899—

1902"; "Tank Economics"; "German Anti-Tank Weapons"; and "French Tank Organisation." In between were published many technical and historical notes as well as short special articles written either by Foot or myself, some of the more interesting being: "Man's Place in Battle"; "The Evolution of Mechanics in War"; "Naval Strategy and Tactics Applied to Land Warfare"; "The Secret of Victory"; "The Scottish War Cart and Zisca's Wagenburg"; "Bloodless Means of Quelling Civil Disturbances"; "Chinese Use of War Carts"; "The Mechanical Policeman"; "Influence of Tanks on Military Operations"; "The Medical Aspect of Tanks"; "Strategical Paralysis as the Object of the Decisive Attack"; and "Petrol *versus* Muscle."

Of No. 1 thirty copies were issued, but it was not long before our circulation rose rapidly, and finally topped 400. On November 5, Colonel Clive Wigram rang Foot up and said that His Majesty was most interested in *Weekly Tank Notes* and would like to receive a copy. The origin of this request must have been that, on October 25, I had met Colonel Wigram, and though I do not now remember it, I must have mentioned our "newspaper" to him. Anyhow, in my diary I have a letter from him dated November 5, 1918, in which he said that His Majesty was much interested in these notes, and would like to receive an "undiluted copy" each week.

Other noted "subscribers," as Foot mentions in his *Memoirs—Three Lives*—were: nearly all the War Office Departments, the Admiralty, the Air Ministry, Army Headquarters, India, the Dominions, the Prime Minister, several members of the Cabinet, the Senior Officers' School, the Small Arms School, the Royal Military College, the Royal Military Academy, G.H.Q. France, G.H.Q. Great Britain, etc., etc. Later on, on February 2, 1919, in No. 24, my paper on "The Secret of Victory" must have appealed strongly to Mr. Churchill, then Secretary of State for War, for after reading it he wrote to the

D.C.I.G.S.: "It would be a good thing if these admirable tank notes and other literature on the subject were printed in a volume for confidential use." I was thereupon ordered to arrange this, and eventually four printed quarterly volumes of notes appeared; the last two remained in typescript, because I did not consider that in the stresses and strains of 1920 they warranted the expense of printing.

Thus far internal propaganda and what it led to; now as regards my first few days' work.

On August 2 I placed a demand before General Lynden-Bell for 500 men to complete the 16th and 18th Battalions, and for 4,000 to start off the first batch of five new Battalions at Wool. At the time I explained to him that, unless I got these men by September 1, expansion would be delayed. Then, on the 3rd, I saw Brigadier-General E. B. Mathew-Lannowe, in command at Wool, regarding accommodation. He told me that "there would be the very greatest difficulties to be overcome if anything like the buildings required were to be completed by December." Next I dealt with tank production, which was seriously behind-hand, and lastly saw General Harington about tank policy. These things set going, on the 6th, as I have related, I returned to France.

When I came back I found that everything was exactly as I had left it. I may have been impatient, and though six days is nothing in the life of a War Office, it may be something very vital in the preparation for a campaign. All that had happened was that the Ministry of Munitions had reorganised the old Tank Committee into the Tank Board, of which I was to be a member.

As regards expansion something had to be done, so, on the 17th, I placed before the D.S.D. a memorandum on that subject. In it I stated that we should aim at a total of 34 Battalions, of which we already had in France fifteen, excluding the 17th Armoured Car Battalion, and in England two—the 16th and 18th. I decided upon this total

because it would mean an exact doubling of the Corps. This was most convenient for training, for it meant that each new Battalion could be formed at Wool, and after two months split in halves, one half proceeding to France, to be replaced by an equal number brought home from each Battalion in that country. Then, after a further two months' training, I judged that new Battalions would be ready to proceed overseas. By this system of interchange of personnel, completely new Battalions would not be sent to the front; for each proceeding there would contain 50 per cent. of salted men—a tremendous advantage.

As June 1, 1919, had been decided upon as the date for the opening of the decisive campaign, the programme, which included three Canadian Battalions, worked out as follows:

- 1 Canadian Battalion, formed in August ready for dispatch in December.
- 5 British Battalions, formed in September ready for dispatch in January.
- 1 Canadian Battalion, formed in October ready for dispatch in February.
- 3 British Battalions, formed in November ready for dispatch in March.
- 1 Canadian Battalion, formed in December ready for dispatch in April.
- 3 British Battalions, formed in January ready for dispatch in May.
- 3 British Battalions, formed in February ready for dispatch in June.

It was essential to this scheme that there should be no delay in starting off the first five Battalions very early in September, and though I had asked for 4,000 men on August 2, by the 17th nothing had been done to collect or allot them.

I soon discovered where the stricture lay—it was in the department which dealt with man-power, and here nothing

could be done, because not until the 23rd was the expansion programme authorised by the War Cabinet. Then, on the 30th, leaving Foot in charge, I had to go over to Advanced G.H.Q., at Val Vion, to attend a Conference on the general establishments of the Tank Corps. Having obtained a promise that these would be ready by September 15, I returned to England on September 2 to find that Foot was being obstructed.

There and then I made up my mind once and for all to have done with this equine, asinine nonsense. Skipping my immediate superior, I went straight to Sir Henry Wilson and said to him: "At your request I came over from France to assist in doubling the Tank Corps; yet since I have been here I have met with nothing but obstruction from certain people (these I named). If you want that Corps doubled, you must, as regards man-power, give it priority over all other arms. If you do not do this, I have no further use for the War Office nor the War Office for me." He saw my point, took a slip of paper and wrote on it the authority I asked for. Armed with this missive, for the time being we were able to pepper our enemies.

Man-power settled, a similar problem arose over accommodation. Though the obstruction here was not so flagrant, it was just as pronounced. As in the one case it was personal and vicious, so in the other it was bureaucratic and virtuous. The Finance Departments were tied up in regulations, and so completely tangled that it made no difference whether there was a war on or not; the rituals had to be observed, even if the heavens fell. Between the years 1914 and 1918, financially, the hair-splitting was as active as theologically it had been in the days of the Homoiousians—fifteen hundred years before. Though military buildings came under the M.G.O.'s Department, and though the M.G.O. himself, General Furse, was one of our best friends, he could do nothing except pass files to the Finance Departments, which covered them with cabalistic figures and passed them back. In

the circumstances in which I had to work, without exaggeration it might have taken six months before contracts were placed, and an equal period before the new buildings for the reinforcement camp could have been occupied.

There was nothing to do but cut this Gordian knot, for time was totally insufficient for its unpicking. Further, in the War Office the only possible way of gaining time is to jump the departmental trenches and entanglements and go straight for the enemy's G.H.Q., that is, to the one and only man who can in wartime make a financial decision. That man is the Secretary of State for War, and fortunately at the time this appointment was held by Lord Milner, and fortunately also I knew him and he knew me. So I went to his room and said: "The Supreme War Council, General Foch and the Prime Minister have all decided on the expansion of the Tank Corps. Sir Henry Wilson has promised me the men, and I want you to promise me the accommodation, for without it we cannot house or train them. I want £500,000 placed at my disposal, and all questions of estimates and contracts suspended. I fully realise that this is neither the normal nor the most economical way of doing things; but it is the quickest way, and time is more vital than cost." Being a sensible man, he agreed, and I got my way. Building was forthwith put in hand, and by the date of the Armistice it had so far advanced that it was found to be less costly to finish the work than to scrap it. The result is, that to-day the Tank Training Centre at Wool has a row of good workshops, though most of the huts erected in 1918 have since disappeared.

Meanwhile the third great problem, tank production, was becoming an anxious one. I did not doubt, under Mr. Churchill's drastic dictatorship, that the machines would be forthcoming. There might be delays, but what I feared most of all was a breakdown in design. My "Plan 1919" was largely based on the Medium D machine,

and Colonel Johnson, who was working on it, I knew to be a very able engineer. Yet doubts began to arise, not that he could not design it, but that the time at his disposal would be altogether too short for him to test it out once it was produced. I raised this question at the Tank Board and forced a decision to push on at all costs the production of the Medium C. Though its speed was only half that of the Medium D, to carry out my plan reliability was the most important factor of all, and this machine showed every likelihood of not failing us in that respect. Tactically this meant that, were the German trenches wide, as they were likely to be, the attack on the enemy's brain and stomach would have to follow instead of precede the main attack. This, however, was not a vitally important change, as in any case I had my doubts whether our Higher Command would, when the time came, possess the courage to agree to so complete a breakaway from the normal method of attack as suggested in my plan.

Another problem was the Mark VIII tank, a magnificent and awe-inspiring machine to look at, but excessively heavy. I had learned by now that every additional ton in weight meant an increase in possible and often probable complications. Therefore I got the Tank Board to agree to go slow on its production, and all out on increasing the numbers of our Mark V machines. On the whole I think this was a wise change in our production policy, for the Mark V had done all that could be expected of it, and the Medium C, when produced, proved itself to be the most efficient unsprung machine we ever built. As a matter of fact, could we have realised it then, our wisest course would have been to put all our labour into that machine, and to have made it our standard tank.

At this time there were also three other design problems we were engaged upon, namely bridging, mine-sweeping and water-crossing. The first was carried out at Christchurch, where a special Experimental Tank-bridging Battalion was formed. The second was placed on a

design footing and when built looked like a super garden-roller. I cannot say that it impressed me greatly, or even that the problem itself was at this juncture an important one; because land mines, though not difficult to lay—and the Germans had already used them—must be laid by the thousand if certain effect is to be gained. In a paper on this subject, which I placed before the Tank Board, I said: “Should the enemy make use of land mines in conjunction with water obstacles, an indirect way of neutralising them is to cross the water rather than the gaps between these obstacles. . . .” Then I elaborated this far more important problem in another paper, in which I examined the whole question of water-crossing, pointing out that it was more than probable that the Germans would use water obstacles as anti-tank defences.

Once these and several other questions were settled, on September 18 I left for France, as much had been taking place there since my last visit.

I arrived at Bermicourt a little before dinner-time, and the next day a Tank Board meeting was held at Tank Corps Headquarters at which nothing much was decided. On the 20th Hotblack and I visited the Drocourt-Quéant line, which had figured so largely in the plans of the Arras battle in 1917. We found the wire still immensely strong, though broken down in places. The trenches were falling in, and in the corner of one I discovered an anti-tank gun in a steel cupola; the date of its manufacture was 1894. I should not be at all surprised to learn that this was a relic of Colonel Schumann's system of movable fortifications, of which an account appeared in the *Morning Post* in 1888, and which was experimented with during the German autumn manœuvres the following year. These fortifications consisted of transportable cupolas armed with 3.7 cm. or 5.3 cm. guns firing a maximum of forty rounds a minute and using smokeless powder, to which an old German General objected, as he said: “*Es stinkt ganz cannibalisch.*” What lends likelihood to this possibility

is that fixed to the gun I found a brass plate, from which it appeared that it had come from Magdeburg, and according to the above-mentioned *Morning Post* article, Schumann's armoured turrets were constructed in Gruson's works at Magdeburg. I wonder how many soldiers have ever heard of Schumann's invention; ¹ yet I believe that it still has a future, especially in anti-tank warfare.

The next day I returned to London, and there found that G.H.Q. had also returned—to the charge.

Their contention was, that the Tank Corps should cease to exist as a Corps and should be split up into Army Groups. That it should in some theoretical, almost metaphysical way be controlled by a Director-General who—poor man—would have one foot in the War Office and the other in that tactical grave—Montreuil. Under him was to come a Deputy Director-General, who would act for the Director-General whilst he was dodging backwards and forwards over the Channel, and as a Chief Staff Officer with a G.S.O.1, a D.A. and Q.M.G. and a Chief Engineer with a multitude of subordinates immediately under him. It was a monstrous proposal, and one which seemed purposely devised to organise confusion. Further, in idea it ran counter to Foch's policy of an Allied Tank Force in place of Allied Tank Forces. Concerning it I wrote:

“ So long as a Generalissimo is in control . . . a tactical situation may arise which will require him to move part or whole of the British Tank Corps to an area of operations outside the British Command. This being so, unless the organisation of the Tank Corps enables this to be carried out without detriment to the British Army, the Tank Corps and the Allied Army to which that Corps is allotted, it cannot be considered either sound or adequate.

“ In my opinion, the idea underlying the organisation proposed by G.H.Q. is that the British Tank Corps is a

¹ I never had until 1932, when by chance I came across a pamphlet in the R.U.S.I. library describing it.

purely British weapon . . . much on the lines of the Royal Artillery, and that the head of the Tank Corps is not an executive G.O.C., but an Adviser on Tank Operations to G.H.Q. on the lines of the M.G.R.A. at G.H.Q. If this reading is correct, then I consider that the organisation proposed is a faulty one, and that an organisation modelled on that of the Cavalry Corps is one which will meet the general situation better. For not only will it provide a Strategical Adviser to G.H.Q., but also a Tactical Commander to the Tank Corps, that is, a Commander who can operate independently of G.H.Q. and outside the British zone of operations."

I then suggested the following organisation: a Corps Commander of the rank of Lieutenant-General with three main subordinates—a B.G.G.S., a D.A. and Q.M.G. and a Chief Engineer, under whom would come the normal inferior officers. Yet I knew that this organisation would not be accepted, and for one reason, namely the intense jealousy shown by G.H.Q. towards General Elles. That so young an officer would become a Lieutenant-General was taken as a personal insult by most of the Brigadier- and Major-Generals at G.H.Q. It was a disgraceful and utterly disloyal reason.

I then went on to write:

"For two years the Tank Corps has waged a lengthy battle with G.H.Q. on the subject of close tactical co-operation with the infantry. This battle has now been won, and its results are accepted as sound and will, no doubt, remain sound so long as the Corps is equipped with Mark V tanks or machines moving at an equivalent rate to infantry.

"The Medium C tank, which will form the backbone of next year's production, moves . . . considerably faster than infantry—its *average* speed is five to six miles an hour. In its turn it is hoped to replace this machine by the Medium D, which will probably move at an *average* speed of not less than ten miles an hour. If now the organisation

of a Corps armed with these fast-moving machines is based on infantry requirements pure and simple, and if the Staffs and fighting personnel are saturated with the idea of close infantry co-operation, I maintain that the full powers of these machines will not be developed; in other words, that the doctrine of close infantry co-operation, perfectly sound for the Mark V tank, will become a dangerous dogma when applied to the Medium C.

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“ I am given to understand that G.H.Q. propose to select infantrymen to command the Tank Groups. These officers, saturated with the infantry idea, are unlikely to develop the necessary instinct for independent tank action whilst attached to Armies whose Commanders again will be chiefly thinking in infantry terms, unless they can be directly influenced by one man—their Tank Corps Commander, who will strike a just balance between co-operation and independent action. This balance, I maintain, is out of the question if the G.H.Q. organisation is adopted.

“ The main lesson (presumably) learned by all Allies this year is, that an ounce of surprise is worth a ton of undisguised preparations. Surprise is not necessarily gained by hitting an adversary when his back is turned, an attitude he does not always assume, but by hitting him when his attitude is normal and in a manner he does not expect, or with a weapon he cannot counter: in other words, by new tactics he does not understand.

“ Next year it is probable that the Germans will have efficient tanks of their own, and that their anti-tank defence will be highly developed. This possibility facing us, are we going to continue with the tank tactics of 1918, when we shall have machines the characteristics of which will enable us to supersede these tactics by something better? Are we going to indulge in ding-dong tank battles when with the expenditure of a little brain-power we can smash the German defence or, better, turn it to our advantage? If there is any possibility of such short-sightedness . . . then, I maintain, that we should immediately set about and discover what the powers of the

Medium C and the Medium D tank will enable us to do, and on them build up an organisation which will permit us to develop these powers to their fullest extent."

In order to see what could be done to modify this new attempt to geld the Tank Corps, I suggested to General Lynden-Bell that it might be as well for him to go over to France and talk the whole question over on the spot. This he agreed to do, and, on October 2, we left for Montreuil, arriving there at 8.30 that evening. The next morning we motored over to Bermicourt and Erin and were back at G.H.Q. about three for a Conference which was to be held there at three-thirty.

Those present were Generals Lynden-Bell, Elles, Burnett-Stuart and Dawnay and myself.

I felt that in the circumstances the G.H.Q. representatives could do little, even had they wanted to, because Sir Douglas Haig was adamant. He represented that type of man which Bossuet must have had in mind when he wrote one of the truest of aphorisms, namely: "Nothing is more terrible than active ignorance." He had been brought up to recognise two fighting arms only—cavalry and infantry. All other arms were auxiliary and subordinate; consequently, it was not a question of reason but of predestination that all new arms, aeroplanes, tanks, etc., must fall within the auxiliary category. To suggest that tanks should be organised like cavalry was to him not only an insult to his arm, but something absurd. To suggest that they should be organised like artillery was to him unquestionably right. How else could they be organised? If by the will of God they could not be classed as cavalry or infantry, they must be an auxiliary arm, and to argue this point with him would have been sheer waste of time. He was a man as fixed to this idea as a limpet to its rock.

This Conference, much against my will (and it was useless quoting Foch's policy, for Foch, and any form of subordination to or co-operation with the French—the un-

speakeable Frogs who shot foxes and wore brown leggings with black button boots—was anathema at G.H.Q.), decided that Elles should not be called G.O.C., but Director-General. That he should have under him a D.D.G. and a B.G. and three S.O.s, or else a B.G.G.S., a B.G.Q. and a B.G.C.E., or a G.S.O.1, an A.A. and Q.M.G. and a C.E. So many letters were mentioned that everyone was completely bemused, and, in the middle of this algebraical muddle, it was decided that the D.G.'s powers would be restricted to advising G.H.Q. (an impossible task), and that all tanks in G.H.Q. reserve (seldom would there be any) would come under him. The question of personnel was then discussed, and it was left with the War Office to decide whether or not to accept 12,000 men from Salonika and the men of the 63rd Division. At length General Dawnay informed the Conference that G.H.Q. did not want a tank expansion, and as the Commander-in-Chief had definitely stated that he considered eighteen Battalions sufficient, it was not the business of G.H.Q. to find the additional personnel.

What was so astonishing was this: Ever since August 8, tanks had been used again and again. There was now scarcely a Corps, Divisional or Brigade Commander who was not yelling for them, morning, noon and night. It is no exaggeration to say that had we had three, four or even five times the number of tanks we actually had, we should still have been unable to meet the demands made, and it is a fact which cannot be disputed that, except where the enemy voluntarily fell back, very little progress in the fighting was made unless tanks were present. On at least one occasion supply tanks were thrown into the fight, if only to terrorise the enemy and enthuse our own men. Yet Sir Douglas Haig, whose reputation as a General was daily being forged by the tank, was against expansion, and behind him and around him moved that shadowy cavalry cabinet which jealously stimulated this insane conviction.

That night I returned to Tank Corps Headquarters, not

despondent, but convinced that I was confronted by a one-eyed Cyclops. Yet so long as one knows what type of man is in opposition, it is possible to plot and plan accordingly. Next day I sought fresh air, and at 6 a.m. motored over to Advanced Tank Headquarters at Feuillères, five miles west of Péronne. From there I visited Guillemont Farm, and later proceeded to a little west of Le Catelet, which was then under heavy shell fire. Around Guillemont Farm the ground was literally covered with American dead, all clean killed by machine-gun fire. At the time burial parties were collecting them in long rows—most must have been magnificent men. Apparently, from what I could learn, the attack of the 27th American Division had been shockingly planned, prepared and executed. The infantry advanced some 1,500 yards behind their artillery barrage, which was placed 300 yards *behind* the German position! The result was slaughter, and the 301st American Tank Battalion which supported this attack, never having been warned of the existence of a minefield laid by the Fifth Army in February, floundered into it and was blown to pieces. Of the thirty-four tanks which took part in this massacre, only ten rallied. This attack was a complete fiasco and a disgrace. As I turned for home, the last shell I saw fired during the war fell in the hamlet of Bony.

On the 5th I was back in England, and once again immersed in the eternal question of man-power, which ever since the suicidal Ypres battles of last year had for us become the crucial problem of the war. On the 9th I went over to France again, this time to attend a meeting of the Inter-Allied Tank Committee at Versailles.

I arrived at Boulogne at 12.30 p.m. and there lunched. Then, before getting into my car, I asked the driver whether he had any spare petrol on board, for in these days it was more difficult to buy than the rarest liqueur brandy, and we should be passing out of the British area. He said that he had, so I got in and off we started for Versailles.

At about 7 p.m.—it was now dark—we entered the forest of Marly, when suddenly the car slowed down and stopped. The driver got out, and opening up the bonnet began to tinker about with the engine. As nothing happened, I said to him: “You are probably out of petrol—put in your spare tin.” He then blurted out that the tin was empty.

What an idiot! Here was I, in the middle of a wood and some ten to twelve kilometres from my destination. I was about to set off on foot, trusting to pick up some vehicle on the way, when I noticed a light coming from what appeared to be a house among the trees on the left-hand side of the road; so I said: “Go over to that house and see if you cannot borrow some petrol.”

I had little faith in miracles, and whilst waiting for his return I heard voices, and remembering that he knew but a few words of French, I entered the wood, passed through a gate and then came upon a large house, from which light was radiating out of an open window on the ground level. As I drew near I saw that it came from a superbly equipped kitchen, with rows of glittering copper pots, with maids in pink print frocks, and a cook with a white chef’s cap on. In the middle of an interested group of men and maid-servants stood my driver, attempting to explain what he wanted in anything from Hindustani upwards.

By a side door I entered the kitchen, and came up against a man of middle height, whom I took, and rightly so, to be the master of the house. I explained what I wanted, and replying in a curiously foreign French accent, he informed me that I could have as much petrol as I liked, as he was the Argentine Minister (M. de Alvea), and that this was his country house—Louvenciennes. He then asked me to come upstairs whilst the car was being filled.

I entered a magnificent lounge, English in style, in which an immense log fire was blazing. Then he asked me if I would stay for dinner, which was on the point of being served. I was about to excuse myself when, from a far

door, entered one of the most lovely women I have ever seen. This vision of youthful beauty instantaneously made up my mind for me, and I answered that I should be delighted and honoured.

The vision was his niece, half Scotch by birth, and an extremely bright and intelligent girl. Then appeared Madame, so, after a hasty clean-up on the part of myself, we went in to dinner, and the meal was in keeping with the house. Our conversation was, of course, about the war, which M. de Alvea considered would end before winter set in. His reasons for this were exceedingly sound, and I think it was from that evening onwards I began to feel this was so. Nothing now much mattered—the war was in its last lap.

I got to Versailles about eight, and at 10.30 a.m. on the following day attended the Conference at the Hôtel Trianon. It was really a lamentable waste of time. A diminutive French General, a hedgehog of a man, was in the chair, his sole object being to obtain every possible tank assistance he could out of ourselves and the Americans without giving anything in return. General Rockenbach, the American Tank Commander, was sitting next to me; he could not understand a word of French, and, consequently, everything the diminutive little man said was translated, and in such a way that it left no doubt in my mind that the whole performance was a “ racket ” staged to compromise Rockenbach into agreeing to hand over to the French an open cheque. The proceedings were so blatantly Gallic that I gave him a kick, and whilst apologising for my clumsiness I whispered: “ They are getting at you.” He thereupon assumed the attitude of a Carolina mule, but later on was on the point of being hobbled when I scribbled on my agenda paper: “ For God’s sake hold out till noon.” He did so, whereupon the little General, who for the last ten minutes had been glancing at the clock, suddenly got up and exclaimed: “ *Voilà, c’est midi ; allons déjeuner!* ” But what amused me most was that, after

this sorry little farce, Rockenbach said to me: "How did you guess that?"

Lunch at an end, I set out on my return journey to Bermicourt, dropped a load of petrol, as a cancellation of my debt, at Louvenciennes, and then, on account of pressure trouble, took ten hours to reach Tank Headquarters.

The next morning I was on my way back to England, and from now onwards for exactly a month, that is, until November 11, the bulk of my time was taken up in fighting for men. However, before I deal with this last bout in this unending battle against obstruction, I should like to mention two or three events of a pleasanter and more interesting nature.

First, on October 17, His Majesty the King became Colonel-in-Chief of the Tank Corps. This was more than an honour—it was a definite strategic gain—for it placed the Corps on a far firmer footing as regards its future than any expansion or reorganisation could possibly do. Next, on the 25th, His Majesty visited the Tank Training Centre at Wool. He arrived at 11.30 a.m. and was met by General Lynden-Bell and myself. From Wool Station he went direct to Lulworth and inspected the 1st Canadian Tank Battalion, the 303rd American Tank Battalion and a composite British Battalion consisting of five Companies, one from each of the five new Battalions then in the process of formation. After this he got into a Medium A tank and proceeded to the battle practice range, where he watched a gunnery practice. This ended his inspection, and at 2 p.m. he returned by train to London, General Lynden-Bell and myself accompanying and lunching with him on the way.

The second event was the passing of the new Tank Corps establishments. G.H.Q. had promised to dispatch them to the War Office on September 15, but the normal Wigramish process had been applied to them, and I did not receive them until October 22. They were of great length,

covering ninety-two foolscap pages, too long even for General Wigram to check under a twelvemonth; but fortunately for us he was no longer at G.H.Q. Though they were largely inoperative, that is to say, Sir Douglas Haig had got his way as regards gelding the Command by reducing Elles to the position of an adviser to a man who could not be advised, I forthwith suggested that they should be sanctioned; because, if the war ended, they would end with it, and if it did not we could return to the charge later on. Besides, a day or two earlier, I had had a long talk with the C.I.G.S. on the attitude of G.H.Q. towards the Corps. The point which perplexed Sir Henry Wilson was, why this prejudice still existed; he thought that it would have ceased now that General Wigram had gone elsewhere. I explained to him that General Wigram was but a subordinate, a cog in the machine. From the tank point of view he might be a very troublesome cog, but the fact remained that it was not the cog that really mattered, but the mainspring. I explained to him that the prejudice was in nature twofold: first it was due to blind, vested interests in the cavalry arm, the existence of which was threatened by the tank, and secondly to personal jealousy shown towards Elles. Lastly I told him that so long as Sir Douglas Haig remained Commander-in-Chief the removal of subordinates would not have the slightest effect.

On these points Sir Henry agreed, saying: "I believe you are right." Then he pointed out the extreme difficulty in getting a change effected. To which I replied that the only means was to take the bull by the horns, bearing in mind that the sole way of reducing the war to a single-minded operation was to replace Sir Douglas by a man who was willing to carry out the ideas of the Imperial General Staff—besides, he could always be made a duke. Where to find the right man was the real difficulty, and had the war continued, and had I been asked to make a choice—not that I was capable of doing so; yet when a subordinate initiates a problem, he should always have a provisional

solution in his head—I should have said that the man who could fill this billet best was not General Smuts, as some people hinted, but Winston Churchill.

Had this courageous and imaginative man been in control, I do not think the Tank Corps would have had much trouble with the man-power department, whose sole object, though its chiefs did not realise it, was to herd men into the slaughter-house—the infantry battles. On October 21, a War Office Conference was held on the situation of man-power. The Army Council wanted conscription in Ireland and the return of 84,000 men from the Navy and other departments at home. As regards the Tank Corps, this Conference decided that 30,000 additional men should be allotted to it—10,000 for new tank units, 15,000 for reinforcements of old and new units and 5,000 for Bridging Battalions, etc.

This was a decision, but, as is so often the case in our Army, it decided nothing. On the 28th, while I was away visiting the Tank Corps Cadet Battalion at Hazeley Down, Foot nearly perpetrated murder. To quote his own words:

“Some of the senior officers at the War Office seemed almost demoniacal in the bitterness of their opposition to tanks. Cavalry officers were particularly fierce in their hostility to the new weapon, a very queer thing in view of the fact that many of the best Tank Corps Officers had come from the Cavalry. Possibly this was the reason, and the defection of some of their number was responsible for the fury of the rest.”

Amongst these officers was a cavalryman—the cork we had to draw. Foch having decided on the expansion and Mr. Lloyd George having agreed to it, armed with a copy of the minutes of the Conference of the 21st, Foot went to the department concerned to draw this cork. On entering the room he said:

“ I have come, sir, with reference to the expansion of the Tank Corps. I want to make arrangements for the transfer of the necessary drafts to Wool, so that the men can start their training as soon as possible.”

“ What are you talking about ? ” he replied. “ There isn’t going to be any expansion of the Tank Corps.”

“ But surely, sir, it has just been decided,” I protested.

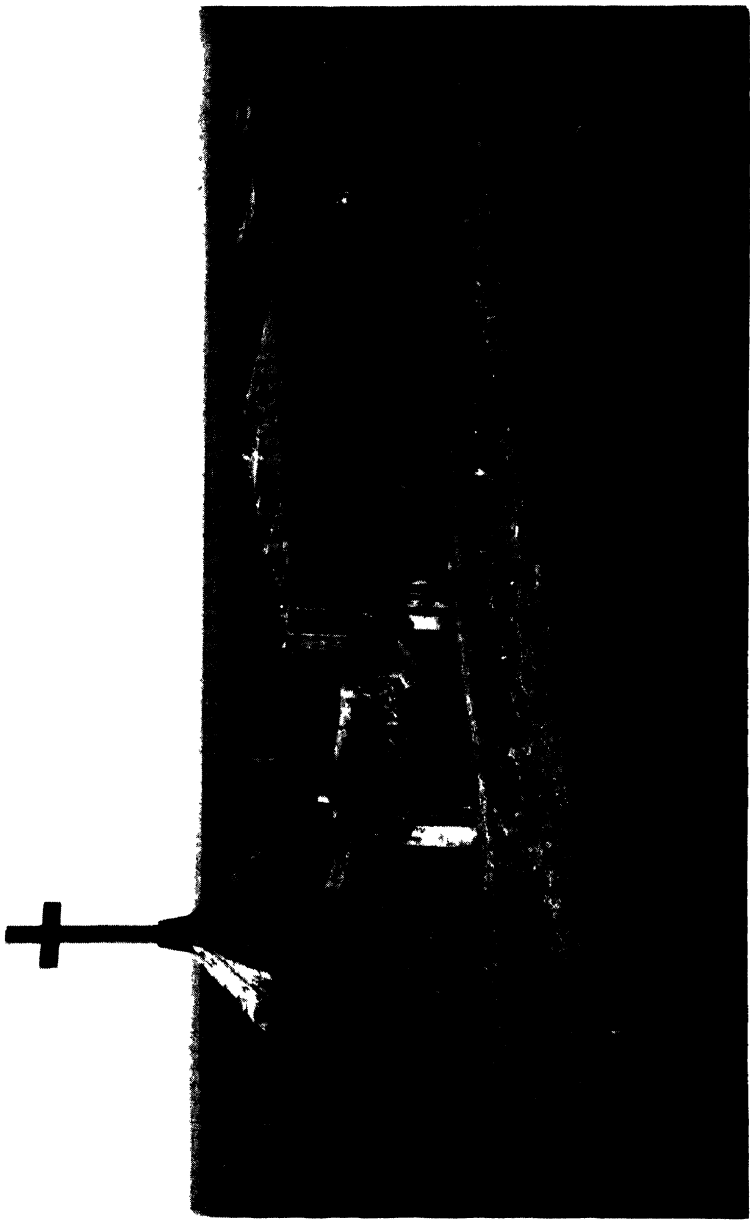
“ Not at all,” was his rejoinder. “ There was a Conference in Paris last week at which the Prime Minister was present, and they decided against the expansion of the Tank Corps.”

Then Foot writes:

“ I saw red. He was lying, for what purpose I cannot imagine, but it was almost too much for me. I had a heavy file in my hands, his head was bald—I actually began to make the motions for beating him over the head. What would have been the result I shudder to think—certainly a court martial. In the actual moment of striking him I realised that there was another officer in the room, and by a supreme effort I controlled myself; but it was a very near thing. ‘ That is not the truth, sir,’ I exclaimed, and then I rushed from the room. Back in the safety of my own office, I summoned a shorthand typist and immediately dictated to him the substance of the conversation which had just taken place. As soon as it was typed I signed it and sent it direct to the D.C.I.G.S., who was then General Harington. I don’t know what happened that afternoon, but the drafts of reinforcements left for Wool on the following day.”¹

I have quoted this incident because it is typical of the obstruction we were faced with and had to break through. Though Foot could not imagine for what purpose this wretched little man was prevaricating, I knew perfectly well. He was hand-in-glove with the G.H.Q. Cavalry Ring. I do not say that he had received definite instruc-

¹ *Three Lives*, pp. 227–229 (Heinemann).



THE ALBERT-BAPAUME ROAD NEAR POZIÈRES, NOVEMBER 11TH, 1918.

tions from France to obstruct, for of that I know nothing; but I do say this, that he was mentally one of this equine Tammany Hall, which would far rather have lost the war than have seen cavalry replaced by tanks.

This impasse over, it was immediately followed by G.H.Q. re-raising this same question on November 4; consequently, further delay occurred and yet another explanatory letter had to be written. Lastly, on the 8th, presumably to tangle this problem completely, the Department concerned prepared a draft letter for dispatch to G.H.Q., in which was asked how many men they wanted and whether 30,000 was the figure? Had this letter been dispatched, the whole problem of expansion would have been thrown back to the position it was in in July. This was exactly what G.H.Q. wanted, because they were opposed root and branch to the expansion. What Sir Douglas Haig demanded was that these 30,000 men should be earmarked as infantry reinforcements, and there can be no doubt whatever that the Cavalry Ring wanted them for this same purpose, for otherwise their sacred arm would be reduced. This occult battle, I repeat, had nothing whatever to do with the winning of the war; it was a life-and-death struggle fought round the question of cavalry supremacy. Very rightly and in a strange way clairvoyantly General Lynden-Bell decided to hold the draft letter over until 11 a.m. on the following Monday. To the minute, at that hour and on that day, November 11, the "Cease fire" sounded and the cavalry were saved!

CHAPTER XV

THE TOWER OF BABEL

WITH the Armistice the War Office collapsed, not like a city shaken to the ground by an earthquake, but like a jelly thrust into a hot oven. For nearly four years I was fated to struggle in this glutinous mass, and though during that chaotic period I kept a full diary and could with ease write a book on it, here I do not intend to attempt anything so wearisome; but instead, to ignore chronological sequence and pile up two chapters of chaos to fit those anarchic years.

First it must be realised that between 1914 and 1918 the War Office had doubled, trebled, quadrupled and quintupled itself, and secondly that in one day, November 11, it was bereft of its four years' *raison d'être*. Its very size paralysed it, and in the circumstances it would be altogether unjust to blame individuals for the harlequinade which followed the sorry pantomime of slaughter, because with one exception all individuality was lost, and that exception was—the C.I.G.S., Sir Henry Wilson. A little later on there was another—Mr. Churchill, when he became Secretary of State for War.

The first of these two remarkable men saw the turmoil locally and as a joke; the second universally in the tragic form of Bolshevism. Both, I think, were right: the first, in that had we all seen the after-war epilepsy as a jest, it would soon have been laughed away; the second, in that had we looked upon it as a dread disease, we should not have bothered about reparations and peace treaties. Instead, we should have proclaimed a *Deus vult*, not a crusade of the victorious Powers only, but of the vanquished as well, in order unitedly to advance upon the infidel and

rescue White Europe from Red Insanity. Both these men saw visions of foolishness, but at differently inclined angles.

I have compared Sir Henry Wilson to a harlequin, and here I must add—of the grand Mephistophelean type. He loved contention, because in the differences between others he could whet his wit and exercise his sense of the ridiculous. In the political sphere he played the part of an H. P. Blavatsky's mahatma, and in the military he was clever enough to disguise the fact that he was something of a charlatan. In spite of his insincerity, in which his loyalty to Ulster must always be excepted, he was, like his great opponent, Mr. Lloyd George, as attractive a personality as one could wish to meet. When he proclaimed, as he often did at such establishments as the Senior Officers' School or the Staff College: "Why have we six Divisions in our funny little Army?" and invariably answered that question by saying: "Nobody knows and nobody cares!" Though he seemed to be casting the blame for this indifference upon some occult force, he was really openly and honestly expressing his own opinion.

The Army Council was his performing troupe. And that this was so is astonishing, when it is realised that at this time the Military Members were all men of high ability; in fact, I should say, they were the ablest soldiers who have as yet graced that Council. Seldom did I attend a meeting, and if I did it was to represent the D.S.D., who in his turn might be called upon to represent the D.C.I.G.S., and as General Lynden-Bell abominated Council meetings, he never attended them if he could find an excuse. On the few occasions upon which I took his place, the proceedings were almost invariably the same. Sir Henry Wilson sat at the head of the table with the agenda paper before him. He looked at it, not in order to solve its knotty problems, but to think out how he could most whimsically extract from them a first-class dog-fight. Then he would raise his long legs until his knees rested against the edge of the table, and looking at the ceiling, he would

sway himself backwards and forwards in a soothing way and slowly mutter: "When I was a little Rifleman," or something equally unexpected. Next, as if by magic, a bone of contention was whisked into item one, whereupon the M.G.O. started growling at the Q.M.G., or the A.G. at the M.G.O.

As all these heads of departments were, as I have said, men of high ability, the disputes which characterised these meetings were of a high order, and the higher they rose, the less was done to reorganise the dissolving war Army. The truth is that anything organic appeared to Sir Henry as rigid, and to him the rigid was repellent and unnatural. Had he been an organiser, that is by nature something he could not be, long before the war ended he would have created a small, able, internal Staff to plan the post-war Army. I realised this directly the turmoil began, and, on December 13, was bold enough to put my views on paper. I pointed out that, as regards the General Staff, we wanted a routine branch to administer all existing arms, and a "thinking branch" to develop future organisation. I went so far as to write: "An army must be organised in accordance with the limitations and powers of the weapons with which it is armed." That "... developments will eventually be forced on the Army by civilian pressure from outside, instead of as a result of clear thinking ahead on the part of the General Staff inside; the consequent delay will frequently mean that these inventions are only introduced . . . when they are approaching obsolescence." I ended by saying: "In placing this paper before you, I trust that you will not think that I am suggesting that General Staff Officers are individually incompetent. This is not the case, for my opinion is, that it is not individuals, but the present General Staff organisation which is at fault; for it forbids the co-ordinated development of weapons and their employment on scientific lines."

The first result of this lack of clear thinking was that, though in 1914 the Army was mobilised to plan, and a

highly efficient one at that, in 1919 it was demobilised not to plan, but to greed; for Mr. E. S. Montagu, who, in 1917, successfully infused dry rot into our political system in India with his ridiculous dyarchy idea, which was nothing less than organised anarchy, did the same in 1918 when chairman of the Army Demobilisation Committee. Placing money-making before common equity, he all but succeeded in wrecking the Empire. Serious mutinies occurred in France and more serious ones still in this country. In fact, early in January 1919, the whole situation got out of hand, and G.H.Q. Great Britain were powerless to deal with it. One day the War Office and the Horse Guards were surrounded by mutineer A.S.C. drivers, who had driven up from Kempton Park in lorries scrawled over with: "Down with Red Tabs!" . . . "To hell with the W.O.!" . . . "No more plum and apple!" . . . "We demand Demobbing!" etc., etc. Foot quotes me as saying at this time: "I believe, Foot, that this country is nearer real disaster at the present moment than it has been at any time in the last hundred years. If we persist in trying to carry through this Demobilisation Scheme, we may lose everything we have won in the war."¹

Fortunately, immediately after this disgraceful incident, Mr. Churchill became Secretary of State for War, and the situation was saved by scrapping this still more disgraceful scheme, which, like its Indian counterpart, organised anarchy on wholesale lines.

Meanwhile other egregious committees were assembled; the General Staff having no policy, no idea even of what the after-war Army would be required for. On the day after the Armistice I was informed that it was to consist of a peace establishment of twenty Divisions organised on a compulsory and a voluntary basis; the first for home and the second for Indian and Colonial service. Frankly, this appeared to me to be ridiculous and contrary to all historic precedent. A fortnight later I heard that the idea was:

¹ *Three Lives*, p. 236.

twenty Divisions for home service, ten for India and twenty cadre Divisions as a second line, which would come into being on mobilisation, and further that an Army Reconstruction Committee was shortly to assemble and settle this question.

My informant was an optimist; but when I saw a list of the members of this Committee, few things could have filled me with a deeper pessimism, for I at once realised that "reconstruction" meant "reaction." Major-General W. D. Bird was President; early in the war he had lost a leg, and consequently had not seen any of the latter-day fighting. The members consisted of four Dominion Generals, two Indian Army officers, one being Brigadier-General K. Wigram, and a gunner General. On one occasion, and I am glad to say one only, I appeared before this Committee to give evidence. I was asked two or three platitudinous questions on tanks, the most original and unexpected being: "How many hours a day can a tank run?" To which I answered: "Thus far we have never exceeded twenty-four." When the interim report of the Committee was published, the M.G.O. informed me that no mention of tanks was made in it; perhaps in the circumstances this was as well.

A few days after this extraordinary question was asked me, I met Sir Henry Wilson in the passage outside his room, and as usual he greeted me with a—"Well, Mr. Fuller, and how are your egg-crackers?" I told him of the Bird Committee, and he was as pleased as Punch. He said, he never thought that General Bird was such an enthusiast as to imagine that my egg-crackers could move at all. To this I replied: "Well, sir, what do you think of this? Someone came into my room the other day and said: 'Tanks are only useful to fight people who stand up against them. If they won't stand up, obviously they are useless, because these people will run away, and so will never get killed.'" Laughingly he replied: "That must have been an Irishman," and as a matter of fact it was.

However, these asinities led nowhere, so in June I put

up a paper to the D.S.D. in which I asked what our object really was. I suggested that the future should be viewed under two headings: (1) An interim period in which a makeshift army was organised, and (2) A new model army which would replace both the war and the pre-war armies. Nothing, however, came of this suggestion for two years, and as late as August 7, 1919, when the Army had passed from dissolution to advanced decomposition, the General Staff, headed by the C.I.G.S. (I should have liked to have seen his face), solemnly sat down and discussed the report of the "Hamilton Gordon Committee on the Organisation of the After-War Army." This Committee had recommended forty Divisions at a yearly cost of some £100,000,000! Considering that to-day we are spending over £40,000,000 on five, this sum was certainly not excessive.

What Sir Henry Wilson said I do not know; but in all probability he agreed with each member in turn, and in such a way that each was compelled to disagree with the rest. This actually happened on a later occasion with armoured cars; on which incident I wrote: "The position has now become chaotic. The C.I.G.S. agrees with all parties, and all parties disagree between themselves. The A.G. wants armoured cars in Ireland; the D.S.D. in England; the D.M.O., according to whichever sub-department is the more plausible, in Mesopotamia, India or Egypt. And in the end H. W. will probably get them to Parliament Square. There seems to be no end to armoured-car possibilities."

"The fact is," wrote to me the G.O.C.-in-C. of one of the Commands, "H. W. talks and talks and no decision is apparent at the end of any meeting! We cannot help knowing this, because it is the same with everything."

But it was with politicians he liked best to talk, because to so many of them he appeared to be a strategical Nostradamus. In May 1920 he said to one of the "frocks," who was not quite certain whether he really was an incarnation of Minerva or not: "I have a splendid idea. I shall leave

the Army and go to America and Balkanise that country." And when asked what he meant by this, he explained: "America is likely to be our next enemy. I intend setting North against South, East against West and Black against White." Then, when his listener replied: "What has this got to do with reorganising the Army?" he assumed one of his Mephistophelean postures and slowly answered: "Everything, for then we shall have no need for our funny little Army at all."

From Balkanisation he would at times for relaxation turn to mechanisation, flitting from one to the other, like a dragon-fly among reeds and rushes. On August 20, 1920, I attended a Conference at which he, the D.C.I.G.S. and M.G.O. were present. The alleged problem was the future of weapon-power, but the real one was to relate a story about Foch. He had met him on the 9th, so he told us, and Foch had informed him that the French Superior Council of War, under Marshal Pétain, considered that the rifle would soon be an obsolete weapon, and that, consequently, the greater part of the French infantry ought to be armed with machine guns and tanks. To Foch he said: "How can you find men of sufficient ability to carry out such a radical change?" To which the Marshal replied: "Mon cher Wilson, there is really no great difficulty in getting officers with the requisite experience." "Well," said Sir Henry, "in our funny little Army all officers sufficiently enlightened to deal with such an organisation are already fully occupied on other work." "If that is so," answered the Marshal, "why do you not employ Lord Haig?"

Yet in a way Sir Henry Wilson was right, for though it is true that, whatever the circumstances might have been, he could not have reorganised the Army, with such an instrument as the War Office headed by the Army Council it was impossible for any man, even had he possessed the wisdom of Athena and the driving force of Mars, to organise anything. He was in the position of a painter of miniatures

equipped with a boot-brush. Seeing how foolish it all was, he daubed out caricatures to make people laugh, and in this he was eminently successful.

Before we can blame him or any soldier in his position, it is necessary to understand what a Government Department is like; yet in all probability, in 1919, the War Office was more alive than most others. I began to realise this soon after the war ended, when a naval officer came over from the Admiralty to see me about persuading us to introduce intelligence tests in our recruiting. I said to him: " 'Intelligence,' that is not exactly a word for us, surely? " To which he replied: " Oh! you are far more alive on this side of Whitehall. Do you realise that on our side, there are old, old men lost in the cellars of the Admiralty still counting the round shot we fired at Sebastopol? "

This is substantially correct, and is applicable to all Government offices. Vital necessities grow into obsolete luxuries, and in rosary fashion they are fingered year in and year out, because they mean bread and butter to those who finger them. In 1919 there were all kinds of curiously busy departments in the W.O., which was more muddled than complex, possessing a huge body, so obese that it could barely move, an immense pumpkin as it were, on the top of which was balanced a pea—the Army Council. Built up of a gigantic mass of departments and sub-departments; these tended, like cancers, to grow by a reduplication of cells. In 1914 the entire War Office cost £457,000 a year, and in 1919 the Finance Department alone cost £562,000!

Whilst the heads of departments are, turn and turn about, playing blind man's buff in an empty room, the sub-departments are busy waging an incessant internecine war; not because they hate each other—far from it, for at lunch-time they are the best of friends—but in order to justify their existence. To write " I agree " on the flyleaf of a branch memorandum, whether you agree or not, is the height of bad form unless the agreement is

qualified; because to agree to a suggestion is apt to shorten its questionable life. Also, to come to a decision is officially an ill-bred act; for it is prone to reduce work and, consequently, it threatens appointments. Holy Harry once told me that, after a careful study of branch memoranda, he had learned how to write a minute on any subject in such a way that the department to which it was addressed would be compelled to forward it to some other department, which in turn would have to send it on to a third, and so on. He told me that his record minute was one which passed through no less than seventeen different sub-departments, and that in its wanderings it took thirteen months before it was returned to him with an answer which had nothing whatever to do with the subject; consequently, he was able to start it off on a second journey. Also, he told me that, if by some error a decision is arrived at which is unpalatable, the proper course to adopt is to send the file to the Military Secretary's Department, where it is promptly lost.

As the branch memoranda system keeps the sub-departments busy, the Army Council system renders the heads of departments impotent. In all matters of importance, and especially such as demand individual initiative, in order to avoid arriving at a decision the Councillors form themselves into a committee. It is not a matter of the C.I.G.S. saying: "This is what I want," and of the other members replying: "Very well, we agree"; for this would endow the C.I.G.S. with a kickable anatomy. Instead, a Council meeting takes place, and an agenda is prepared on, I will suppose, "Is there or is there not to be a Territorial Army?" The game is then opened by a series of bluffs, for no player knows exactly what the other players have up their sleeves. Besides, should a player be so churlish as to place all his cards on the table, the game cannot be played. But should one of these sportsmen hold indifferent cards, or should he have omitted to read the agenda, his best

course is to blur the issue by relating some personal reminiscence. A highly odoured kipper adroitly cast will more often than not confuse the scent and set the players galloping off the agenda in all directions. A player who is an old hand at this game will always reserve his trumps to within about ten minutes of the lunch hour, when he will play them in rapid succession. If he can keep going for about twenty minutes, almost invariably the game is his. The winning has, however, nothing whatever to do with the agenda, and though the subject of discussion is the Territorial Army, it may easily happen that when the minutes of the Council are published, it will be found a new School of Pharmacy has been created, always subject to financial approval, which, being unobtainable, means that the true answer is—zero.

From this brief excursion into the War Office system it will be realised that Sir Henry Wilson may have been right after all to extract from it the maximum of tomfoolery. Here, however, I must leave him and turn to that other great individualist—Mr. Churchill.

It was a dull January morning when an elderly Major-General strolled into the War Office to pass the time of day. Finding his friend engaged, he waited in one of the passages on the second floor. A young Staff Captain with a large bundle of branch memoranda approached him, and the Major-General, no longer able to contain himself, turned to him and said:

“Isn’t it ridiculous? Winston has been made Secretary for War.”

The Staff Captain looked at him wearily and answered:

“It is ridiculous. The only man who could put this business straight is Trotsky!”

He then vanished with his papers through a doorway.

Trotsky was a revolutionary, and so was Mr. Churchill. Yet they moved in opposite directions. But a day or two before, as I have related, mutineers were driving lorries round the War Office block shouting, “Justice to British

heroes!" The civilised world was foundering, and the centre of this collapse was Moscow. I believed then, and I still believe to-day, that 50,000 *trained* soldiers could have settled the Russian Revolution in six months; further, I believe that had Mr. Churchill possessed dictatorial powers, he would have done so. Two things only were required—men who would obey an order, and a definite promise to the Russian peasants that the land was theirs.

What was done does not concern me here, for the only part I played in our deplorable Russian venture was to send tanks out to South Russia. This work began in May 1919, when I was asked to find twenty-four machines for General Denikin. But the difficulty was to find the men; none could be obtained from France, and few from England. I suggested re-enlisting demobilised tank soldiers at double or treble pay, and had this been agreed to we should have obtained a thousand in twenty-four hours. But no, the Government's policy was not to fight the Bolsheviks, but merely to annoy them by training Russians to do so and to supply them with arms and equipment. The equipment they took readily enough, and it became a kind of cash; for bundles of clothing, etc., were used as money. For example, two army shirts were valued at three sacks of potatoes, and a pair of boots represented the price of a pig. But as to training, this was not in their line.

The first officer I sent out to instruct them was Major E. M. Bruce. He had lost his right arm in the war and was one of the most fearless and remarkable soldiers I have ever met. Later on, in August, he sent me a letter, and to quote from it will be quite sufficient to show what the Russians were like and worth.

He began by saying that the "Russian officer is a type of man the British soldier does not understand." Then he went on:

"The following is a typical case of the intense ignorance of the Russian officer: at an examination I asked one what

he would do if a certain part of his machine was broken. He answered: 'I would make the sign of the Cross and get out of the tank.' "

" On arriving in Russia our men heard of great advances, terrific fighting and terrible losses. These rumours were soon dissipated when they learnt the truth. On one occasion three of our men in a droshki by mistake captured what was reported to be a strongly fortified village: on entering it they found that its strength consisted in two or three rifle pits."

" I personally saw what was reported as being ' the fiercest fighting of the war ' at Tsaritsin. During the whole of this advance I only saw one dead man. I may add that I led the tanks into action on horseback with a very comfortable feeling of security."

" The Russian judges an officer's worth by his capacity for vodka and his success with women; likewise the Russian officer judges his success as a host by the amount of vodka consumed at his table."

The truth is, that they were an impossible people to assist. The men were hard, ignorant peasants, and as General Sadler-Jackson wrote of them: " They are capable of great powers of endurance . . . they are impervious to weather and have iron constitutions. They get drunk on anything, including aviation petrol." But as regards the officers in the Archangel area, he said: " With few exceptions they were afraid of their men . . . physical cowards, drunkards and thieves . . . they appeared to lack all moral sense and sense of shame. . . ." At this time, 1919-20, they would not for a moment have stood against the most indifferently commanded Western European soldiers. As a matter of fact, though Bruce does not mention it, and because it was an act of disobedience of orders, it was he in a tank manned by half a dozen British mechanics who won the battle of Tsaritsin. This I think shows that a small British tank force, supported by a Division or two of infantry for line of communication and

police work in its rear, could in a few weeks have turned the Bolsheviks out of Moscow, and, incidentally, at a tenth of the cost we were put to by supporting Denikin. Yet another truth is that Russians can only be ruled under the knout, and it was upon this simple and brutal fact that Lenin founded his triumph: he was a realist, and knew his countrymen far better than we did; hence his success and our failure.

Next, to complicate reorganisation, came civil war in Ireland. My part in this turmoil, surely the most disgracefully handled in our history, was to provide armoured cars, tanks and trained men; for since March 1919 I had taken over control of S.D.4—S.D.7 dying out—and S.D.4 was the department which dealt with training; in actual fact it was a kind of “Universal Aunts.”

From a military point of view this new problem was not an abnormally difficult one. And such difficulties as arose were not so much created by the Irish rebels as by the Cabinet. The rebellion was either a military problem or it was not; nevertheless, the Cabinet decided that it was both. On March 25, 1919, immediately after assuming control of S.D.4, I put a paper before the D.S.D., who minuted it on to the D.C.I.G.S., in which I suggested that, as we were faced, not only by Bolshevism in Russia, but by sedition and rebellion in Ireland, Egypt and India, and as it would take several years before we could reorganise our old voluntary Army, we should meanwhile raise a temporary force of mercenaries, highly paid volunteers, strong in machine-power and comparatively weak in man-power. I concluded this paper as follows: “The problem which faces us directly peace is signed will no longer be one of civilised warfare, but of guerrilla warfare and police work, for which our present Army is not equipped, organised or trained.” What we required was an advanced guard which would cover reorganisation.

Even at an earlier date still, namely February 2, 1919, I had written a short memorandum on the use of tanks in

civil disturbances; yet neither of these papers had the slightest effect, and so we plunged deeper and deeper into the bog of anarchy.

In Ireland the centre of the rebellion was Dublin, in which city, strange as it may seem, were established Army Headquarters, in the offices of which sat Sinn Fein clerks to whom our Staff Officers dictated their secret plans and orders: it was nothing else than *opéra bouffe*. Although it was no business of mine, what we should have done, as I pointed out at the time, was: To evacuate Dublin forthwith; to establish our Headquarters in the field; to wire Dublin in and scour it out quarter by quarter, and to make use of blockhouse lines and mobile columns to clean up the country, as we had done in South Africa in 1901-02. If this were impolitic, then we should have evacuated Southern Ireland; for what in actuality we did was through our weakness to connive with the enemy and encourage him in his cowardly assassinations.

In May 1921 General Macready, then Commander-in-Chief in Ireland, sent in a deplorable report, concerning which I wrote:

“ On March 25, 1919, I advocated the raising of a special force to deal with partisan warfare. . . . This had no effect, the then D.C.I.G.S. stating that, though my views of looking ahead were interesting, they could not be adopted. To this the M.G.O. added, that ‘ it is impossible to raise special forces eighteen months ahead to meet special circumstances.’

“ What has since happened? We have done nothing but raise *improvised forces*, not special ones, to meet the *normal circumstances* which form the aftermath of every great war. At the present moment Ireland is filled with untrained troops and no system of training in partisan warfare has been established in that country.

“ The situation which confronts us is by no means a novel one. It is the same which confronted us in America in 1775 and in Ireland in 1798.”

I myself was unable to go to Ireland to examine the situation on the spot, but a friend in whose judgment I had complete confidence did so. His conclusions are of considerable historic interest. He wrote:

“ . . . The position is Gilbertian with the humour left out. Moreover, although I have been kept more or less in touch with the situation by reading the papers and interviewing officers who have returned, I found the real situation so much more serious, that I imagine there must be very few officers even at the W.O. who really know what the state of affairs is.

“ The British Army in Ireland is besieged. I suggested this view to a highly placed Staff Officer. He demurred, although feebly, and suggested that there was at least a ‘ No-man’s-land.’ Nevertheless, the facts are, that responsible officials cannot move without strong escort, money cannot be drawn from the Bank without strong escort, dispatch riders are being rapidly replaced by armoured cars, officers must move not only armed and in bodies but with their revolvers very handy; in motor-cars they carry them actually in their hands. Troops sleep in defended barracks—behind barbed wire.

“ Communication by road is becoming increasingly difficult. To go from Dublin to Cork, one may fly, one may go by T.B.D. [torpedo-boat destroyer] and be met by an escort at the docks, or one may go by armed train (very slow). . . . On the other hand, the population moves when, where and by whatever route it wishes. This is a curious situation for a force whose *raison d’être* in the country is to maintain order. Anyone can enter Ireland and enter it hung about with any number of revolvers. The search for arms at Holyhead is a farce. . . .

“ A great deal of distress, delay and discontent is caused by the fact that the ‘ war ’ was to be run with the peacetime (1914) machinery of administration. The paper work for units split up all over the country is very onerous and a great waste of effort.

“ The Sinn Fein paper *An Poghagh* has an astonishingly accurate appreciation of the situation in regard to possible

reinforcements and the probable duration of the autumn 'campaign.' The whole very cleverly exploited, I am told, by Erskine Childers.

"One thing is abundantly clear, that to proceed on the present system of impotent defensive and without martial law *rigorously exploited* is useless. If you pour in more troops on the present lines, you are simply throwing good money after bad. Four Divisions now are besieged in driblets over, say, one-third of the country; six Divisions will be besieged in exactly the same way over half the country. Michael Collins—who is gradually becoming a legendary figure, as De Wet in South Africa—can go on doing this sort of thing for years and is making big money at the game: 90 per cent. of houses in Ireland will shelter him either through fear or sympathy.

"One heard talk of drives across country—especially of 'the mountains.' To drive successfully one must drive to something stationary, and that is the experience of all partisan warfare. Further, it seems that it is not the mountains that want driving, but the slums of the towns. . . ."

This was the unvarnished truth; but it made no difference, because the Cabinet refused to grip the problem, and seemed to be under the illusion that, so long as military action was avoided, the rebels would be considerate enough to come to heel. Nor were the military authorities less to blame. As late as November 1921 G.H.Q. Ireland put in a demand for twenty-five new Battalions, so urgently required that the men "need not be trained." All that was wanted, so I was informed verbally, was that puttees were wound round their legs and a rifle thrust into their hands!

The truth is, that at this time our Government, having no faith in itself, did not believe that any problem could be solved, and that the only way of tackling a situation was to pass round memoranda or to assemble a committee to examine it. This applied, not only to Ireland and to

Russia, but to all things military. Thus it happened that, under a cloud of words and ink, the Army' automatically slid back into its 1914 form, but without the discipline, leadership or solidarity of the Army of that date.

In a way I sensed this as soon as the Armistice was signed. I had fought the tank battle during the war, and had it not been, now the war was at an end, that, following historical precedent, I felt every endeavour would be made to save the older arms at the expense of the newer, I should most certainly have resigned my commission. I felt this so keenly that, on November 17, 1918, I went over to France to talk the whole matter over with Elles. Briefly the gist of my proposals was that, unless unitedly we made every effort to save the Tank Corps, it would inevitably be scrapped. That it was all-important to keep its name before the public; consequently, we must advertise it by every means within our power. Further, that it did not matter creating enemies, but what above all things did matter was apathy. I then laid before him a scheme I had worked out, the aim of which was that each unit in the Corps should at once set to and write up its history—“ . . . to collect all possible historical incidents and data whilst they are fresh in mind. . . .” This he agreed to; accordingly, on the 20th, each unit received a series of instructions including 103 separate headings of guidance to assist in this work. Eventually copies of these histories were received by me and filed at the War Office and the Tank Training Centre, now the Royal Tank Corps Depot.

On that same day Elles issued the following Special Order:

“ (1) To-day is the anniversary of the Cambrai battle.

“ (2) During the memorable twelve months just elapsed, the Tank Corps, whilst undergoing laborious measures of expansion and reorganisation, has taken an honourable part in the great defensive and offensive battles of the year.

“ (3) At Cambrai, which marked the beginning of a

definite era in method of attack and again in the defensive actions of the Spring Campaign, the Tank Corps was fought practically to a standstill.

“The first counter-offensive on the Western Front was led by our units on July 4, and since that date we have had the privilege of fighting at the head of the Armies in eleven¹ pitched battles and twenty-six lesser engagements.

“(4) I take this occasion to express the sincerest thanks to all ranks for this long-sustained and successful effort which has made high calls not only upon the skill of Commanders and Staffs and the tried courage of the fighting personnel, but in an especial degree upon the unobtrusive labours and devotion to duty of engineer, training and administrative units.

“(5) The period before us will demand from all qualities of patience, steadiness and good feeling. I am confident that these demands will be met with the same spirit by which past difficulties have been overcome.”

Stimulated by this generously worded order, I returned to England on the 24th, and I will now turn to the chief difficulty which was to confront me for over three and a half years.

Whilst Sir Henry Wilson was playing the part of Mephistopheles, and whilst Mr. Churchill, like Hercules, but without Iolas, was struggling with the Bolshevik Hydra, I soon discovered that the foundations of War Office inefficiency were neither military nor political, but that they were rooted in finance.

This question is, I think, of some interest, for unless the Treasury system is understood, discredit will quite wrongly, as it normally is, be credited to the account of the soldier. Generally speaking, the ridicule and abuse so frequently levelled against the War Office should in actual fact be placed on the doorsteps of the Treasury, for its interference and obstruction are the root causes of our military inefficiency.

¹ July 23; August 8-11; August 21-25; September 2; September 27; September 29; October 3; October 8; October 17; October 23 and November 4.

First, it must be realised that, after such an upheaval as the war, military efficiency depended upon changes both great and small. Changes demand money, and obviously there must be a limit to the total spent. To see that this limit is not exceeded is rightly the duty of the finance branches.

Secondly, it must be remembered that, in 1919, these branches were shackled by Treasury regulations, which were much as they had been for over two hundred years. In fact, whilst the soldiers' problem was to reorganise the Army according to the experiences gained during the war, the problem of the finance branches was, not to see that the estimates were not exceeded, but to re-establish the Treasury system of meticulous, microscopic inspection and control.

In any great reconstruction, what is wanted is a plan and a lump sum of money to meet the cost of putting it into operation. This was the problem of 1919, and though the Imperial General Staff had no plan, nevertheless, whenever an attempt was made to formulate one, it was forthwith hamstrung by Finance. Whilst in the human body the energy derived from food is distributed to the muscles according to their needs, in the War Office the money, laid down in the Estimates for our military muscles, is not distributed according to needs, but in order to conform to a series of rules and regulations defined by Treasury officials, who do not know the butt end of a rifle from its muzzle.

After a week or two of peace War Office routine, what did I find? That money was not "the language of business," but the language of ritual. As the Caberian hierophants shouted out barbarous names, so also did the F.1's, 2's, 3's, 4's and 5's, etc., shout out meaningless figures. Mistaking rules for principles, a suffocating miasma submerged every argument. Tactics were questioned, training was queried and organisation was disputed. Here are a few examples out of scores which pestered me:

“ *March 23, 1920*: I pointed out to F.2 that it was quite impossible for me to carry on if every item asked for in the School Estimates had to go through an elaborate process of criticism, most of which was of a flimsy and aggravating character. He replied that he had to protect the public, which presumably means that he considers it his right to dictate to the I.G.S. what the training of the Army is to be and how the Schools are to be organised.”

“ *April 8, 1920*: F.5 refused to sanction the issue of two machine guns¹ per Infantry Battalion on the plea that establishments were still unauthorised. They were much offended when I pointed out that I considered this a gross act of obstruction, because they knew for certain that the establishments would contain more than two of these weapons.”

“ *May 25, 1920*: Some time back I asked F.5 for financial sanction for 65 revolvers at Hythe. This was returned with the remark that F.5 did not consider that 65 revolvers were necessary for the instruction of 65 N.C.O.s, because these N.C.O.s could not all fire simultaneously! ”

“ *August 21, 1920*: F.5 not understanding the difference between Lewis guns and Vickers guns, and that the latter alone are classed as machine guns, has, during the last three weeks, obstructed the issue of 18 Lewis guns to Territorial Battalions, because the General Staff, in A/Gen./75, stated that the requirement per Territorial Battalion was 4 machine guns.”

What with F.5 on the one side and F.2 on the other, life was barely worth living, and though the normal officer would, after a month or two, have let things slide, not feeling inclined to be normal, I foolishly tried argument. This, of course, is a fatal thing to do; because it is useless arguing with a calculating machine. The right thing to have done was to have doubled all demands in order to provide an ample margin for losses in financial skirmishes. This I objected to do, because I felt that it was an open acknowledgment of one's intellectual inferiority, so before

¹ There was no cost involved in this, as we had thousands in surplus stock.

deciding on my course of action, I wrote the following frank letter to the chief offender:

“ Dear Mr. —

“ We have now arrived at a purely academic discussion on values. You calculate these in terms of expense, I in terms of efficiency. Neither of us is impeccable, and we both may be right or wrong, or, more likely, there is an element of right or wrong in both of our arguments.

“ Certain facts, however, must be realised, and, in my opinion, the two most important are the following:

“ (1) We have recently completed four years of war, and the position we find ourselves in in 1920 is six years ahead of the theories we held in 1914.

“ (2) We have not yet had time to assimilate the lessons of the war; consequently, we cannot definitely decide upon our future requirements.

“ These are our terms of reference, and the missing quantity in our present equation is still x , which can only be guessed at or worked out. We, in S.D.4, have to find the value of this x , and my solution is that, anyhow for 1920–21, we stop guessing at the issue, and that instead I be given a free hand to work out the problem. If I am authorised a bulk sum of money, I will work out what I consider to be an economic solution, and I am ready to stand or fall by that solution.

“ The business end of military training lies in S.D.4. We have to train the Army, and all I ask for is the sum of money which the Treasury is willing to sanction for that purpose. What I can do with the sum suggested I have already submitted in the Establishments. What I cannot do is—to modify these Establishments so that, in my opinion, they will not work efficiently.

“ I attach certain remarks relative to the criticisms raised by you. I do this, as it is in accordance with the custom of Government Departments, though I fully realise that it may lead to an interminable discussion on values, in which public money will be squandered, whilst the representatives of bureaucracy are carrying out a series of tilting matches against each other's alleged inefficiencies.

“ There is one way only of attaining efficiency in business, viz. to put a man in charge of a job and to let him run it, and then to accept the result of his work if he produce a dividend, or to out him if he does not.

“ I put forward my views on this subject quite frankly, as I feel certain you will understand them better in this form. To put it bluntly, what I want to avoid is an ink-slissing skirmish which to my mind can result only in a waste of public money.

“ Finally, I shall always be most grateful for your advice, which is more helpful than your criticism, because I feel that unless we can pull together, the training of the Army will result in a series of uncomfortable jolts to all concerned.”

“ Yours sincerely. . . .”

I might just as well have addressed this letter to the Living Buddha of Urga for all the good it did. Then I changed my tactics and assumed what may be called “ the Wilsonian attitude.”

For instance, I was one day asked by General F. Lyon, our Military Attaché in Brussels, to give a lecture on tanks to the Belgian General Staff. Though on this occasion I had ample time wherein to prepare it in French, I thought it would be as well to take out with me a set of magic-lantern slides; for then, whenever I wanted to collect my thoughts, I could switch on a picture. Were I to ask Finance to sanction the purchase of these slides, it would have taken weeks of minute-writing in getting it, so I ordered them myself. Later on, in came a bill for four pounds odd; whereupon the Finance Department concerned refused to pay it, because sanction had not previously been obtained. As I refused to pay, and as they refused to pay, when the inevitable reminder came in, I was asked how this account was to be settled? I minuted the file back: “ As you refuse to pay and as I refuse to pay, I attach 17A, for your approval.” It was a draft Council letter to Messrs. Z. Photographers, and it read: “ I am

commanded by the Army Council to inform you that there is not sufficient money in His Majesty's Treasury to meet this account. I have been requested to express to you the deep regrets of the Council for any inconvenience this may cause you." I never saw that file again.

On another occasion a somewhat bulky file appeared in which Minute 86 read: "What is the military aspect of this question?" I looked at the jacket and found that it was marked "Sword Washers." I had no idea what a "sword washer" was, but after enquiry discovered it to be a small piece of leather placed under the hilt to prevent the blade rattling in the scabbard—value, at a guess, one shilling a gross. Instead of reading the eighty-six learned minutes upon this vital subject, I wrote the eighty-seventh—the most concise and the briefest I have ever penned. It read: "B . . . s!" I never saw that file again.

That afternoon Holy Harry crept into my room, and we discussed how by magic unwelcome files could be made to vanish. During this conversation he informed me that, as it was not in accordance with W.O. ritual to burn files, though he had known this happen, a method which had been suggested to him was to go down into the cellars, where there were some 3,000,000 stored away, select one, preferably belonging to the forties or fifties of the last century, tie up the offending file in it and send the lot back to Registry.

However, things were not always so easy as this, and sometimes it was necessary to use low cunning, and at others some crafty ally in order to mitigate one's inborn sense of honesty.

To get the better of a witch-doctor, if you are not one yourself, depends largely upon finding a bedevilled partner. Now, in the War Office, though the medicine-man business is mainly monopolised by Finance, the supreme medicine-man is, nevertheless, the Director-General of Medical Services; consequently, with him and his department I established a firm *entente*. I sat as a member on

the War Office Hygiene Advisory Committee, I visited the Millbank Laboratories, and I gave evidence before the War Office "Shell-Shock" Committee in order to cement this friendship; because I knew that the R.A.M.C., possessing a magical vocabulary transcending in obscurity anything belonging to Finance, could, if they only realised their strength, rout the common enemy in a moment. What can you do against such words as cubic capacity, vitamin B's, oxyhæmatin, micrococcus, chromosomes or drosophila-melanogaster? You can do nothing, and if you happened to be an F. man with the threat held over you that, unless money be forthcoming, the result will be universal gynandromorphism—to put it bluntly, you have got to up with your hands.

Many times did these magicians help me in getting rid of rat-infested huts, etc. But the most noted occasion was when Colonel R. Campbell, Inspector of Physical Training, asked me to provide him with, I think it was, eighteen human skeletons. This was just the kind of problem that Finance loves to deal with; because it leads to an interminable correspondence and keeps a pundit or two in pay and allowances for at least six months.

I went to my friend the D.G.M.S. and said: "Physical Training is all-important." He agreed. "Physical Training depends upon a knowledge of physiology." Answer—"Yes." "To teach physiology, skeletons are useful." He demurred. Then I said: "You do not seem to realise that you are the most powerful man in this building."

"Oh, no, no," he replied, "never . . . nothing like so powerful as the Finance Member."

"Oh! yes you are," I answered, "for if he obstructs you, all you need do is to go to his room and certify him insane."

The skeletons were authorised, though I cut down the number.

Looking back on this long period of nearly four years, except for what I shall recount in my next chapter, by far the most important work I was engaged upon was in

assisting General Sir Ivor Maxse in reorganising the Infantry Depots. His was a wonderful project, and the Depots were in a shocking state of obsolescence. The vital part of this scheme consisted in drafting recruits direct from each Depot to units overseas as well as to units at home. Had this simple principle been accepted, the greatest step forward in Army organisation would have been made since the days of Lord Cardwell. It was not; Finance was against it, and unfortunately the A.G. did not see eye to eye with General Maxse. Had he co-operated, then I think that by now we should be in possession of the most efficient, obsolete Army in the world.

Curious as it may seem to-day, nearly fourteen years after the events I have recorded, so far as my military work is concerned, one fragment only has endured, namely the insertion of the "Principles of War" into the *Field Service Regulations*. This question began on November 29, 1919, when I was a member of a committee assembled to revise the Staff College Entrance Examination. At the time I pointed out that in the *F.S.R.* of that date a mention was made that "The fundamental principles of war are neither very numerous nor in themselves very abstruse," and then no single principle was defined. Thereupon the C.I.G.S. decided that definition was necessary, and over a year passed by in revising the old *F.S.R.*, when one day I discovered that someone had suggested that there were two great fundamental principles of war, namely: "(1) Infantry never relinquishes captured ground," and "(2) Infantry is never exhausted." Who the genius was who gave birth to these majestic thoughts I do not know, but the result was that the question was taken up at the Staff College, to which a proof of the new *F.S.R.* was sent, and, on April 6, 1920, I received the following letter from the head of the syndicate dealing with Chapter I:

"We have finished our labours on the first chapter of *F.S.R.*, Vol. II, which begins with your principles of war.

General Dill is sending you a copy of them, and I hope you will approve of them as worded here.

“ I write to thank you very much on behalf of the syndicate to which I belong for supplying us with these principles; but what really matters is that there they are in our Bible, and for that the whole Army should thank you, for I am convinced of the paramount importance of having them laid down in black and white as the ‘ acid test ’ of our field training in peace and our operations in war. There is now no excuse for not knowing these principles, and therefore there is far less excuse, if any, for breaking them, with resultant failure.

“ So far as I know they have never been laid down so clearly and completely before in the whole history of war, and we have to thank you for your courage in doing it now. Pardon my enthusiasm, but I do feel, as I know you do too, that this is a great step forward, and you are to be much congratulated, as time will prove.”

I may have felt so then, but I doubt whether I do so to-day; for their purpose has been completely misunderstood, mainly because the military and naval literature which has since arisen out of them (in the U.S.A. as well as here) has most successfully obscured their aim, use and value.

CHAPTER XVI

THE IRON ACORN

As I have mentioned, from March 1919 onwards my duties were nominally those of training. I say nominally; for in actual fact, until the summer of 1921, there was no training except of a very elementary kind. Demobilisation, the everlasting wrangles over establishments, the pseudo-war in Russia and *opéra bouffe* in Ireland, in fact, the after-war dissolution all but prohibited training in any form. Nevertheless, curious as it may seem, when once again it was taken in hand, indifferent and chaotic though it was, it centred round the tank, which, during the whole of my time at the War Office, had to struggle for its existence and recognition.

When, on November 24, I returned from my visit to Tank Corps Headquarters, the problem which faced me was a threefold one. First, I had to get the Corps placed on a peace footing; this entailed establishments and the creation of a corps of officers. Secondly, I had to elaborate a policy for machines; what type should we require and how would we be able to get them? Thirdly, I had to weave these two problems, men on the one side and machines on the other, into a general organisation which would fit our army system. Unfortunately there were no heads or tails to this work, and I had to begin anywhere, everywhere and all at the same time. In fact, conditions prohibited my working logically or methodically: everything had to be improvised, and as the Tank Corps was a war creation, there were no peace precedents to quote, and, worse still, there were hundreds cherished by the older arms, which were daily quoted against it.

To solve these three problems, and unfortunately they had to be solved simultaneously, I was faced by two

spheres of action, the inner and the outer—the War Office and public opinion (including military) which lay outside it. The first meant fighting scores of deep-rooted interests and prejudices; the second meant propaganda and advertisement. Fortunately I was not too professional a soldier to be blind to the latter, which in actual fact was the more important; because, however obtuse the War Office may be, in the end it is the mirror of public military opinion, and from time immemorial the crucial mistake made by our soldiers has been not to take the people into their confidence and, consequently, not to bring them in touch with their own needs. So deep-rooted is their antipathy to advertising, that not only is it still considered unspeakably vulgar even to mention the requirements of the Army in the press, but a strict censorship is maintained over all military publications, in order to prevent a free and unfettered expression of opinion. This Brahmanic outlook I challenged.

I set forth on the quest for free speech, and with my eyes wide open. I realised that I should be proclaimed a heretic and a vulgar self-advertising fellow, and I knew also that I should create enemies; yet without a sturdy opposition it is most difficult to explode deep-rooted absurdities. In fact, as I soon found, I had to assume the position of a bully: to challenge soldiers to fight me in order to prove what bad swordsmen they really were. All this may seem boastful; yet the truth is that circumstances compelled me to act thus, if only to overcome that most powerful of all enemies—self-sufficient inertia.

Articles I wrote by the dozen, all of which had to be passed by the censor. Lectures I gave by the score, but in these I could express my opinions more freely, and, generally speaking, they were well received; for it is a great mistake to think, as the War Office is apt to, that regimental officers are prejudiced against modernisation.

The two most noted of these attempts at propaganda were the winning of the “Royal United Service Institu-

tion" Gold Medal Essay for 1919, and a series of articles I wrote in *The Cavalry Journal* in 1920. The subject of the first was: "The application of recent developments in mechanics and other scientific knowledge to preparation and training for future war on land." And, be it remembered, anonymity was a rule in these essays; each had to be sent in under a motto, and mine was: "Race-horses don't pull up at the winning-post."

I do not intend to quote from this essay, as it will be found in the May 1920 number of the *R.U.S.I. Journal*. All I will mention is that I won it, thanks largely to General Sir Ernest D. Swinton, who was one of the judges; not that he knew who the writer was or that the writer knew that he was judging. Then came the storm.

It opened with a lull on March 7, when an Army Councillor wrote to me: "I was delighted to see that you had won the Gold Medal Essay. Many congratulations, in which the C.I.G.S. will join when he hears. . . . I am looking forward to reading your splendid effort. The General Staff are rightly very proud of you. . . ." But wait and see, for it is always dangerous to congratulate an author before you have read what he has written.

When the essay appeared in print, it was found to be what was then classed as violent military Bolshevism: the General Staff was asked "to think," and to the Army Council was applied the term "amorphous," though Swinton has always insisted that it should have been "inarticulate." General Lynden-Bell came running round to my room exclaiming: "Boney! Boney! What *have* you done?" To my profound enjoyment the War Office was upheaved, and when I was called upon to suggest a way out of this imbroglio, I advised that, as the Army Council select the subjects of these essays, and as the writers of them are compelled to maintain anonymity, in future that Council should arrange for one of its members to write the predestined answer. Surely this was the simplest possible way out; anyhow, I was not asked for further advice.

Then a fresh gale began to blow. The French War Ministry, it seems, were so enthralled that they produced an official translation of it for Battalion Commanders and upwards. On August 7, from General de la Panouse, Chief of the Military Mission at the French Embassy, I received a copy of this translation with the following laudatory note written on the flyleaf by General Buat, Deputy Chief of the French General Staff: *Remarquable étude, profondément pensée, et qui donne, de l'ensemble de la guerre et de l'organisation de l'avenir, une vision exacte et, selon toute probabilité, prophétique. L'auteur a parfaitement senti combien la guerre s'est transformée, sous l'influence du progrès de la science et de l'industrie. Cet ouvrage sera répandu dans tous les centres d'enseignement de l'armée.*

But worse was to come. The President of the French Republic, having (presumably) read my effusion, appears to have been swept off his feet, for in a fit of Anglophilia he awarded me the distinction of "Officier d'Académie," and in hot haste round came General de la Panouse with the insignia and the diploma.

The fat was fairly in the fire: the War Office having frowned on me, the French Government, unconscious of my degradation, had now crowned me with academic laurels. Next followed seventeen minutes and letters, passed backwards and forwards between the War and the Foreign Offices, the outcome being that I was forbidden to accept the honour and simultaneously forbidden to refuse it, because that might insult the President of France. Having forgotten all about this decoration, suddenly, on March 6, 1922, Colonel Fagalde, the Assistant French Military Attaché, who was about to vacate his appointment and whilst clearing up, having found the diploma, etc., in his safe, burst into my room and amidst mutual hand-shakings decorated me; so overwhelmed was he that he forgot to kiss me on either cheek.

Troubles die hard. Having won the Military Gold Medal, next year I tried my fortune with its Naval counter-

part. The subject was: "What changes are suggested in naval construction and tactics as a result of (a) The experiences of the war? (b) The development of submarine and aerial warfare in the future?" It will be admitted, I think, that this is a pretty tough problem for a soldier to tackle. However, I did so as a "leg-pull," sending in my essay under the motto *Veni, Vidi, Vici*, when, on March 2, 1921, came the most unexpected news that I had been proclaimed the winner of the first prize, but that the gold medal would not be awarded me. As the R.U.S.I. refused to publish my essay, later on it appeared in a journal edited by my good friend the late Admiral Sir William Henderson.

Meanwhile essays were upheaving India. On February 1, 1921, Foot wrote to me saying: "Did you hear about the officer who won the Prize Essay in India? The subject was something to do with the Organisation of the Army in India. The assessors included the C.-in-C. The essays were, of course, confidential, and it was announced that it had been won by — of the — Infantry I.A.

"He received the gold medal all right, and the Essay was to be published in the *U.S. Magazine*. At the last minute, however, it was forbidden to be published . . . and — was severely censured, deprived of his appointment and sent back to his regiment. . . . The last sentence of his Essay was: 'Lies are cheaper than gold.'"

I was more fortunate, for in the military eye this essay-winning endowed me with the reputation of being a violent and dangerous revolutionary, and, as is well known, the superlative is a tremendous asset in propaganda. Meanwhile the second event occurred, which further enhanced my evil reputation.

Early in 1920 I was asked by Sir Arthur Leatham, Secretary of the R.U.S.I., to write a series of articles for *The Cavalry Journal* on "The Influence of Tanks on Cavalry Tactics." This I did, and incidentally accused the officers of that ancient arm of "mental lethargy." At once came

counter-attack and counter-thrust: Colonel R. G. H. Howard-Vyse wrote in defence of the *arme blanche*; Major-General W. D. Bird on "Years *versus* Ideas"; Brigadier-General G. A. Weir on "Cavalry in Palestine," and last but not least, for he weighed twenty stone, came Colonel-Commandant Neil Haig, with "Substance or Shadow."

I had fairly stirred up a hornets' nest; but this is what I wanted—opposition; for I was betting on a certainty. So heated became the argument that a full-dress debate was arranged at the Senior Officers' School, Woking, for December 6, 1920, the subject being disguised as "Tanks as a New Arm," it being in reality "Tanks *versus* Cavalry." Mr. Churchill took the chair, and my adversary was no less a person than Lieutenant-General Sir Philip Chetwode.

The debate over, it was not a question of who had won; that did not perturb me in the least. It was, such a typhoon had been raised that no one less than the Secretary of State for War could take the chair, and that no one less than a future Commander-in-Chief in India, incidentally one of the ablest cavalry soldiers we have had for a century, could be selected as my opponent. This may seem boastful, but no; boasting is beside the mark, for my object was propaganda.

As advertising grew, so was demand stimulated, and though this was an important factor in what may be called the intellectual growth of the Tank Corps, a far more important one was the demand for tanks themselves in those areas in which law and order were threatened. There, on account of its intrinsic worth, the tank itself became its best advertiser. And it must be remembered that the professional soldier is a Jekyll and Hyde; a strange creature who, when he sleeps between sheets, sees one kind of war, and when he sleeps under the stars, another. The truth is, that danger is a great astringent of conventions, and between 1919 and 1922 the result was that, whilst Army Councillors, Directors of Departments, etc., etc., were meeting and meeting, and talking and talking and

handing round the mechanical baby, wherever there was real trouble, the man on the spot set about yelling for tanks. This was the great advertisement which put into the shade any small efforts on my part, the value of which depended solely upon keeping up the clamour between these yells.

In January 1919 tanks were asked for in Glasgow, and six were sent there at the end of that month, to be found exceedingly useful as armoured police taxis. Then the Director of Military Operations asked me about the possible use of tanks in Arabia and, on February 12, Colonel T. E. Lawrence came to me on a similar errand. He spun me a long unconvincing yarn centred round flattening out a rebel village 400 miles east of Mecca or Medina—I forget now which. According to him, the Sherif was being subsidised by the British Government and the rebels by the Indian. It was a strange *Arabian Nights*' story, and, as I told him, a fairy tale so far as tanks were concerned unless he could provide the magic carpet.

On the Rhine tanks proved invaluable, and when a suggestion was made to withdraw them, the G.O.C.-in-C., Army of the Rhine, counter-attacked by asking for more. In April 1920 he wrote: "The prestige of the British troops is still high in the eyes of the Germans, and there is abundant evidence that this is largely due to the enormous effect of tanks on the civil population. It is accordingly strongly urged that their number be considerably increased, with a view to their presence acting as a deterrent in possible eventualities [i.e. should the Reds get the better of the Reichswehr]."

Ireland I have already mentioned, and there armoured cars, more so than tanks, were in daily demand. In Persia, General Ironside informed me that had he had "three moderately efficient tanks at Kabin, he could have dispensed with three Battalions of infantry." Simultaneously the G.O.C.-in-C., Constantinople, asked whether economy in man-power could not be effected by tanks and armoured cars?

But it was in Mesopotamia where armoured cars showed their true paces, and this was due to the energy of one man—Colonel G. M. Lindsay. They had been sent there before he was placed in control, and had been grossly mishandled, General Sir Aylmer L. Haldane condemning their use, apparently because he did not realise how inefficient their crews were. Hearing of this, I recommended that Lindsay should be sent out; yet I had the greatest difficulty in obtaining him on account of personal prejudice on the part of one highly placed War Office official. However, after the normal wrangle and financial obstruction, I was successful, and once Lindsay got to Baghdad things began to buzz. He weeded out the inefficient, and accompanied by armoured cars travelled over the greater part of Iraq. On November 6, 1921, he was able to write to me and say: "On all these journeys I have found little in the way of obstacles that would prevent operations by armoured cars, providing that they are properly equipped, and that the personnel is really highly trained, efficient, and knows the country."

In India, as might be expected, obstruction was met with. To overcome it and also to discover what type of tank would be best suited to so hot a climate, I obtained permission for Colonel P. Johnson to be sent there on a visit. On April 8, 1920, he wrote me of his adventures, and the following extracts from his letter are worth quoting:

"I have just got back to Bombay from an extensive and illuminating tour of the Frontier. The results far exceed my anticipations. . . . It will be some time—probably a couple of years—before it will be possible to send to India the types of machines which are wanted to fill the conditions, but when the time arrives . . . there must be something in the nature of a revolution in Army matters. I remember you talking to me years ago in France about methods of Hill Warfare; the costly necessity of taking and picketing the heights in order to protect the troops or convoys moving along the valleys, etc., and how the tank

would alter this. It is all exactly as you said, and, I think, all the people who matter out here are beginning to realise it. . . .

“I got several enquiries after you . . . your propaganda work and *Weekly Tank Notes* have done wonders in the way of educating opinion. . . . Only on one occasion did I feel inclined to despair. This was after spending the best part of half an hour in expounding the possibilities of the new machines to a General. . . . He listened attentively, and, at the finish, remarked that if what I had said was correct, then there was no doubt that these machines might be of *some* assistance to Cavalry!”

But things move slowly in the East, and nothing much came of Johnson's invaluable visit. A year later, on April 1, 1921, I received a letter from Colonel E. B. Mathew-Lannowe, then commanding the 2nd Queen's Royal Regiment in Waziristan. He wrote:

“My opinion is most emphatic that in every way, tanks for fighting and tank design mechanical transport will absolutely solve the difficulties and economise very greatly on both these lines [Wana and Ladha], which are now permanently occupied so far as we know. All I can say is for Heaven's sake let us have tanks up here and we've got them cold, and the country will save enormously in camels, men's lives, widows' pensions, loss of rifles and ammunition. We could raid Makin—their stronghold—at any time we wished with even two tanks and stop all this nonsense. . . . The tank for fighting and M.T. of tank design is the absolute solution to this problem. . . .”

Then a month later I received a letter from an officer of the Wana Column, who had never been connected with tanks. After examining the costly and vulnerable convoy system in use, my friend wrote:

“My experience is that the valleys present no physical difficulties to tanks. On both the Ladha and the Wana

lines there is no gorge too narrow for tanks; the beds of the rivers are not covered with boulders. The latter are met occasionally, but are the accumulation of years, and once cleared are not liable to recur. On the Ladha line there was only one place tanks could not pass as we advanced last year, and that place only took a few hours to clear. On the Wana line, the Wana end of the Shahur Tangi was bad—by far the worst place I have seen on the Frontier—but even it was cleared without much work. So I am confident there are no physical obstacles to prevent tanks being fully used for supply purposes. . . . A tank armoured against ordinary rifle bullets and pulling tenders behind it would go far towards solving the problem. . . . There is another point in favour of such transport. The bulk of our camels were employed in transporting fodder and grain for the camels themselves. This would all be saved. . . .

“I have written at some length, as I feel very strongly on the subject. I know, possibly more intimately than anyone else, the horribly precarious state of our L's of C. in Waziristan, and their most unpleasant vulnerability. . . . It does seem rather extraordinary that our trans-frontier transport in 1921 is identical with that employed by Alexander, bar the elephants!”

I have gone to this length on the question of tanks in India, because the whole of our design problem hinged upon it. As the home Army is mainly a reserve for India, tanks had to follow suit; therefore we wanted to know exactly what India required. Yet India would not tell us because, whilst soldiers on the Frontier slept under the stars, soldiers in Simla slept between sheets. Their problems were vastly different; whilst the first had to fight virile barbarians, the second waged an ink-war on decadent babus. If I may say so with modesty, this state of affairs continued until my visit to India in 1926, as I will describe in my next chapter.

Whilst tanks and armoured cars were, in spite of the most formidable difficulties, winning over those whose work was

dangerous, a most unexpected turn of events occurred. So far, be it remembered, the Higher Command both in England and India had taken very little notice of either tanks or armoured cars. Then the Government decided to hand Mesopotamia over to the R.A.F., whereupon control of armoured cars in that country became a bone of contention between the War Office and Air Ministry. Personally I could not see what this had to do with the War Office. What did it matter who was in supreme command, so long as command was efficient? But Service loyalty can sometimes become treason; anyhow, a first-class row was started.

In August 1920, when lunching with a distinguished Air Force officer, I remember suggesting to him that, as the War Office did not appear to want tanks, it would not be a bad thing if the Air Ministry took them over. I pointed out to him that his Service offered few prospects to officers after they had passed their flying age; but that, if the R.A.F. possessed land forces, officers who were no longer able to work as pilots could be transferred to them. I further explained that the training of the two arms was really very similar, both being based on the petrol engine. Also that the R.A.F. could not be considered a separate Service unless it was self-contained administratively and tactically, and that this was impossible until it was in a position to protect its ground organisation. These were my views in 1920, and they remain my views in 1935; but they certainly were not the views of the War Office.

Instead, an even more unlikely proposal was made, namely to abolish the Air Ministry and split the R.A.F. between the Navy and Army. What this had to do with the War Office I cannot imagine; it looked rather like a revolt in the pantry. As it was entirely beside the mark, for the Government had no intention of abolishing that Ministry, the result was that this quarrel soon began to centre round the control of armoured cars in Iraq, and the more the R.A.F. pressed to take them over, the more

valuable the War Office discovered them to be. Curious as it may seem, this compelled the General Staff to consider the peace status of the Tank Corps.

This problem was a perfectly simple one to understand and an easy one to solve. The tank was a new weapon which was neither cavalry, infantry nor artillery; therefore the problem was obviously to create a new arm. But to the Army Council it is not possible to view any question in its simplest form; because it is composed of departmental heads, each viewing each problem from a different angle whilst simultaneously all have their own axes to grind. So it happened, because this problem was so simple, it took four years instead of four weeks to arrive at its solution.

The whole question was first opened by myself on September 19, 1918, when I asked what the status of Tank Corps officers would be once the war ended? Nothing was done; then, on November 12, I suggested to General Lynden-Bell that, as now the war was over, we should bring the Tank Corps into the army system, which meant that though it would be separately recruited, its units would be allotted to Commands in proportion of one or more Battalions to each Infantry Division. I also recommended knocking off all building except at Bovington Camp, and closing down the production of all tanks other than Medium C and D machines. On December 13 I drafted a detailed policy on these lines; but as one of the Military Members refused to send representatives to discuss it, it died a natural death. This was the beginning of our trouble.

On January 1, 1919, I was informed that the peace footing of the Tank Corps was to be twenty Battalions. I knew this to be absurd, and the figure I was now working to was six—one for each of the old E.F. Infantry Divisions. Then came demobilisation and nothing was done until May, when, on the last day of that month, the M.G.O. (General Furse) put forward a remarkable suggestion, namely that we should at once investigate the possibilities of “a new model

army based on tanks." He proposed the formation of an Expert Committee to consider this subject, and was good enough to suggest that I should be a member, adding: "But one Fuller is quite enough." This project was also stillborn.

Nothing further happened until July, when, after a six-months' wrangle with Finance, Treasury sanction was obtained for the appointment of five substantive Lieutenant-Colonels; but, curious as it may seem, this did not mean that we were to get them, for immediately this decision was made Sir Henry Wilson whisked into the problem, cut a variety of alluring and mysterious capers and then whisked out of it to Balkanise something else.

The position now became Cinquevillian. On October 24 the Military Members decided that the Tank Corps should be a *corps d'élite*. Three days later they decided that there should be no separate Tank Corps at all, and that officers were to be seconded to it from the other arms on the old mounted-infantry principle, which had in former days proved itself to be radically defective. Next, on November 19, it was decided to form two Tank Corps—an Independent Tank Force and an Infantry Tank Force—as this would enable each Infantry Battalion to possess eight tanks of its own. Then, suddenly, it was discovered that the Tank Corps had very nearly vanished.

As the new year opened, it was found that so little remained that it would only be possible to raise, let alone form, two Battalions in 1921; whereupon Sir Henry once again whisked into the picture, for if two Battalions were to be raised, it was imperative that they should be thoroughly Balkanised at birth. The M.I. principle was decided upon; then it was decided that the officers of the Tank Corps should belong to the Royal Engineers; next it was decided to commission a number of temporary officers, but to this F.I. strongly objected, on account of the large number of supernumerary officers we then had. At length nothing was decided.

So the wrangle continued, Sir Henry dancing in whenever a settlement was approached, and dancing out once confusion had become absolute. In February the M.I. system again rose in the ascendant; in April the two-Corps idea again replaced it; in July the old R.E. idea replaced the old two-Corps idea, and by August not one of the five substantive Lieutenant-Colonels, sanctioned by the Treasury in July 1919, had been appointed. Then came September, and with it a furious financial wrangle over the war gratuity temporary officers would have to pay back were they commissioned. At last, in order to prevent the R.A.F. swallowing any more armoured cars, seventy-five commissions were sanctioned; but the terms of service were so atrocious that, in October, one temporary officer only elected to accept a regular commission.

This wrangle continued until March 1921, when I suggested the conversion of surplus Cavalry Regiments into Tank Battalions. Then, in November, it was agreed to raise two new Battalions in 1922, giving us four in all. This was followed by further wrangling. At length, in February 1922, Sir Henry Wilson whisked out of the War Office for good and all, and, on April 12, the Committee dealing with the establishment of a permanent Corps of Tank Corps officers met for the last time and submitted their report. Thereupon the Q.M.G. and M.G.O. raised a new series of objections, and, on July 25, six days before my tour of duty at the War Office ended, this wrangle was in full blast. Happily it was the last of its kind, for a little later on a general agreement was arrived at, and the Tank Corps was recognised as a separate arm within the army system, as I had suggested to the D.S.D. on November 12, 1918.

Neck to neck with the problem of officers ran that of machines. It will be remembered that, on November 12, 1918, it was decided to cease work on all tanks except Medium C's and D's. Of the first, some 500 were sufficiently advanced in construction to warrant completing;

the second were still in the design stage. Then, on December 3, came the first counter-attack. Because no establishments had been issued for a peace Tank Corps the Treasury objected to money being spent on the C machines. Realising that, should we insist upon finishing these machines as had been agreed, we should have the greatest difficulty in obtaining money for the D's, and as in my opinion the D's were likely to prove an immense advance upon any machines we had yet had, I suggested knocking off all unfinished C's (450 in all), so that the design of the D machine might not be jeopardised. I realised that this meant a wicked waste of money, because the Medium C was a really good machine, and it would most certainly have paid us to finish off the 450, if only to sell them to Poland, Czechoslovakia and elsewhere.

When the D machine was first decided upon, mainly with reference to "Plan 1919," the only exceptional characteristic I had insisted upon was high speed—twenty miles to the hour. But now, the war being over and time in consequence less vital, to this requirement I added two others: that the machine should be able to float, and that it should be comfortable. I did so because all our wars entail overseas operations, and because in so many of them great distances have to be travelled; consequently, comfort, which also means physical endurance, is an important factor. Further, as regards the first, as in so many of our expeditions, and notably so in the Gallipoli landing, the crucial tactical problem is how to bridge the gap between ship and shore, I was and still am of opinion that a self-propelled water-crossing tank is the only solution.

To these requirements Johnson added others and of a revolutionary character, such as cable suspension—a totally new idea—and flexible tracks, in order to obviate turning by track skidding. These innovations were, however, too recondite for soldiers to understand; but speed of movement was not. And though it would appear obvious that, other things being satisfactory, the higher the speed

the greater the tactical power, I nevertheless had much difficulty in getting the General Staff to see this. Their fear was that, possessing so high a speed as twenty miles an hour, a tank would run away from the infantry. Curiously enough, I finally convinced them by pointing out that the medium D was not an infantry machine at all, it was a cavalry tank! But I had other reasons for insisting on the maintenance of speed: the first was to stimulate peace design, which must of necessity lack the driving force of war design; and the second, the most important of all, that I realised, directly really high-speed tanks were produced, they would create a sensation in the press, and in consequence gain public notice and support.

The first trials of the Medium D machine took place at Leeds on May 29, 1919, and were remarkably successful. Up a slight slope the tank travelled at a speed of $17\frac{3}{4}$ miles an hour, and down this slope the speed was $28\frac{1}{4}$, that is an average of 23 miles an hour, or 3 miles above specification. To watch it roar past was an awe-inspiring sight, and all that remained to be done (the most difficult task of all) was to render it reliable and if possible fool-proof.

Progress with this machine was so satisfactory that, in January 1920, on my recommendation, the C.I.G.S. was asked to approve of three types of machines, namely a Cavalry Tank, an Infantry Tank and a Supply Tank. All these machines were to be built for tropical climates; consequently, ventilation was of first importance. As regards the infantry tank, I pointed out that, though infantry move slowly, this did not mean that the infantry tank should be a slow machine; far from it, for it should be a speedy machine, just as a destroyer is—to protect a slow-moving convoy. In fact, the slower the infantry moved, the faster these machines should move. That they should be able to move slowly without overheating was quite another question, and a legitimate mechanical requirement to insist upon.

Then Colonel Johnson went to India, and on his return

the specification for a light tank of some seven tons was considered for use in that country. Trials of this machine, later on known as the Light Infantry Tank, took place in September 1921, and were satisfactory. Then of a sudden, in December, a most extraordinary thing happened—I discovered that one of the M.G.O.'s departments (A.5) had secretly been designing a light tank of its own.

To understand this event it must be realised that it was the duty of the General Staff to decide on what types of machines were needed, and that it was the duty of the M.G.O. to arrange for their design and construction, co-operation between the two being established through the Tank Committee, upon which I sat as the General Staff representative. Further, it must be remembered that Colonel Johnson was a civilian engineer, and, between 1919 and 1922, certainly the leading tank engineer in the world. He came under A.5, and A.5 had every right to contract for tanks with Messrs. Vickers or any other firm, because Colonel Johnson was solely a designer; but it had no right to build a machine, experimental or otherwise, unless the General Staff had agreed to its specifications. Suddenly, on December 9, I was informed that a Vickers tank had been built, and that, unless it were put into production at once, the money voted in the 1921-2 estimates for tank construction would lapse. As yet I had never heard of this machine, and to put it into production before it had been tried out was a startling suggestion. But so curiously is the War Office organised and controlled, that economy and efficiency do not enter into its composition, and as £500,000 had been laid aside for tank construction, it had either to be spent or forfeited.

Was this a case of jealousy between soldier and civilian? I cannot say, but what I discovered was, that shortly after General Furse handed over to his successor, a senior officer was brought into the M.G.O.'s department in order to control the activities of Colonel Johnson. And if that were not so, it certainly ended in becoming so. Friction

at once resulted, and Johnson was obstructed at every turn.

Next, on December 19, trials were carried out at Aldershot. During these the Light Infantry Tank developed a speed of over twenty miles an hour, and in three furlongs outdistanced a galloping horse. What of the Vickers machine? It was so slow that in a race it was outdistanced by a Medium C tank !

To cut a long story short, obviously the intention was to get rid of Johnson. In March 1922 the Light Infantry Tank attained a speed of 30 miles an hour and covered $52\frac{1}{2}$ miles in four hours as well as a non-stop 40-mile run (in which high speeds were not attempted) in four hours. Also, on June 20 that year, I went down to Aldershot to take part in trials on Fleet pond, when two machines, the Light Infantry Tank and the One Ton S.A.A. Carrier, crossed the pond and were manœuvred about in it successfully. But Johnson's days were numbered. Soon after this his department was closed down, his inventions scrapped, and, in 1923, a Vickers tank was issued to the Army, an indifferent machine with which it is still equipped in this year 1935 !

In my own mind there is no doubt whatsoever that Colonel Johnson was the most able designer of tanks we ever had; certainly he aimed high, and perhaps too high for the imagination of soldiers. Yet it is my firm conviction that had he been granted another two years wherein to perfect his machines, we should to-day have a tank at least 300 per cent. superior to anything we have got.

Having succeeded in getting the Tank Corps recognised, and having failed to persuade those concerned to equip it with a machine worthy of it, I will turn to my last problem: the creation of a new tactical model.

Immediately the war was at an end, the real military problem was neither that of standing still nor of stepping backwards, nor even of advancing; instead, it was to create a new tactical order. Indeed, in 1919 every great Power

was faced by the same kind of military problem which had faced soldiers in the fifteenth and sixteenth centuries and sailors in the nineteenth. During the first of these periods, the discovery of gunpowder had autocratically demanded a change over from shock to projectile weapons, and during the second, so had steam as autocratically compelled a change from sails to propellers. Now the problem was the influence of petrol on military organisation, and this problem had again and again been referred to in *Weekly Tank Notes*.

It will be remembered that, in May 1919, General Furse had suggested the formation of an Expert Committee to enquire into the influence of the tank upon military organisation. On June 6 I followed up this suggestion by placing a similar proposal before the D.S.D. Then, on August 20, I submitted a memorandum to him called: "A New Model Army." And as I believe it to be the first detailed paper written upon this subject, I will quote certain sections of it, though the views I then held are not necessarily those I hold to-day.

The fundamental idea I founded my proposals on was: "The substitution of machine-power for man-power." Then, having examined recent operations, I wrote:

"(1) The war has opened a new epoch in military history by rendering necessary the creation of a scientifically equipped army, the two leading inventions being gas and tanks.

"(2) The recent war has shown that large conscript armies based on hand weapons have certain fundamental defects: extreme vulnerability to projectiles (including gas), and extreme immobility due to size; the necessity for seeking underground protection, and being tied to road and rail for supply when at rest or in movement.

"(3) The recent war has proved that the petrol engine has not only reduced the human target and enabled above-ground and mobile protection against projectiles to be introduced (with the result that wastage of man-power is

also reduced), but that roads may be dispensed with and mobility of manœuvre and supply increased.

“(4) The fundamental fact to be deduced from these facts is that ‘Mobility’ and not ‘Numbers’ is the line of direction along which the remodelling of the army should proceed.”

Power and not size was the key to this problem.

I next divided weapons into three tactical categories :

“(1) Short-range weapons: Rifles, Machine Guns and Heavy Tanks.

“(2) Long-range Weapons: Guns, Howitzers and Aeroplanes.

“(3) Mobile Weapons: Cavalry, Medium Tanks and Aeroplanes.”

Then I examined the relationship of the tank to the other arms, and proved that the tank—

“(1) Can replace infantry and cavalry.

“(2) Cannot replace artillery.

“(3) Can reduce the necessity for field engineers.

“(4) Will require a corps of mechanical engineers.

“(5) Is dependent for security and observation upon aeroplanes.”

Turning to the New Model, I divided its evolution into two periods: the first, during which the supply services should be motorised in order to speed up movement and reduce the number of vehicles as well as to overcome the uneconomical necessity for feeding animals when not working: the second, to take the Infantry Division as it stood and by degrees reorganise it.

I suggested that an Infantry Battalion should consist of four Companies: two companies of Pioneer-Riflemen, one of twelve or sixteen tanks, and one of twelve or sixteen machine guns. That a Cavalry Brigade should consist of

two Regiments, one Machine-gun Squadron; two Squadrons of twelve or sixteen tanks, and one battery of R.H.A. That artillery should be motorised and engineers divided into field and mechanical. I then readjusted this divisional mass into three New Model Brigades, each self-contained as regards all arms, and showed that the economy effected would be fifteen Regiments, fifty-two Batteries and sixty-two Battalions, and that the total number of Brigades we should require was twelve at home and twelve for India; that Canada should be able to raise six, Australia four, South Africa one and New Zealand one.

An important point referred to training. I considered that the system of condemning an infantry soldier to seven years' rifle and Lewis-gun instruction deadened the brain and did not create a fully trained soldier. I suggested, therefore, that training should be divided as follows: two years' pioneer and rifle training; two years' pioneer and machine-gun training; and three years' tank training.

Finally I suggested the immediate formation of an experimental New Model Battalion in order to carry out tests and trials in tactics, discipline and organisation.

The War Office accepted this idea in rough, and decided upon forming a New Model Brigade in the Aldershot Command, then under Lord Rawlinson. Towards the end of the year I went down there to see "Tom" Hollond, Colonel on the Staff, about it. Finding that an old-fashioned officer was to be placed in command, I urged him to get this changed, pointing out that the Brigade should be formed on the same lines as those of the Shorncliffe Camp in 1803, and that as the secret of success in that camp was to be discovered in the personality of Sir John Moore, he must find a man as like him as he could.

Next, in January 1920, I discovered that the idea was to form this Brigade on a summer-camp footing, which meant that continuity of effort, so essential, would be impossible. Though I pointed it out again and again, I

could get no one to realise that its problem was, not to change tactics only, but to create a new discipline, and for this continuity was imperative. I wrote:

“ First of all we must find our Sir John Moore, i.e. the most liberal, human and efficient Commander we can lay our hands on.

“ Secondly, this Commander must not be tied down by a definite routine.

“ (1) He should be empowered to get rid of all officers he considers inefficient, especially inefficient Battalion Commanders.

“ (2) He should be given a definite period of, say, two to three years in which to work out his new model organisation.

“ (3) His officers and men should be permanently allotted to him for this period, and should not be taken away for foreign drafts, etc.

“ (4) His camp should be a permanent one during the time decided upon.

“ (5) He should be liberally supplied with money and means for working out new ideas and testing improvements.

“ (6) He should not be tied down to any fixed organisation, but allowed to chop and change his units as he sees fit.

“ In fact, he should be in a position to work like an artist, producing a clay model before the statue is cast. The clay must be of good quality, and he must have an ample supply of it; pieces not being gouged out whilst his work lasts. Once the model is finished, it should be accepted or changed and, when finally approved, the Army should be cast in its mould.”

But the Cardwell system stood in its way, that albatross which had then been rotting round our necks for fifty years. Nevertheless, the Secretary of State for War mentioned the creation of this Experimental Brigade in his speech introducing the Army Estimates, so all we could do was to continue to offer up paper sacrifices to the gods.

Nothing happened in 1920. Then, in January 1921, I learned from "Tom" Hollond that the Brigade was to consist of four Infantry Battalions and one Tank Battalion, and that it would only exist in name. In March I made another attempt to get this set right, and, in spite of failure, in April I compiled a long list of problems to be worked out. I knew full well, however, that in the circumstances, none of them would be tackled; but I felt that their all-embracing nature might induce the General Staff to realise what this Brigade should do.

In the summer it started work, and most unfortunately the Infantry Brigade selected belonged to the 2nd Division, commanded by General Butler, Sir Douglas Haig's former D.C.G.S. The "experiments" carried out were farcical; yet some good was achieved, a kind of inverted goodness; for an anti-tank typhoon at once began to blow. In place of testing out the powers of the tank, every conceivable attempt, real and imaginary, was made to belittle them. Infantry rushed about waving green flags representing anti-tank weapons, whereupon tanks grovelled in the dust. Entire Battalions climbed into what were called "anti-tank localities," from which they made warlike noises, and the tanks at once took fright. Stranger still, howitzers and guns disappeared behind ricks, copses and dung-hills and smashed tanks to pieces in Sections by the noise of three rounds of blank. This comedy was repeated during the following year, and then the Experimental Brigade died before it had accomplished anything outside the ridiculous.

With this sorry attempt at reform, my work at the War Office came to an end.

Looking back on it, I can see little more than vast arid expanses of wasted work. Yet in those desert regions, now buried under fifteen years of useless paper, one thing remains to compensate all this squandering of time and energy, and that is the memory of the loyalty of General Lynden-Bell to his subordinates and their loyalty to him.

Though in the circumstances his task in reorganising the Army was an impossible one, without his cheerfulness and friendly help the work of his Staff would have been quite unendurable. He left us on January 2, 1922, and his place was taken by Major-General C. F. Romer, who carried on his tradition; therefore I was fortunate in my chiefs.

I was fortunate also in possessing a sense of humour, for without it the War Office would have assumed the aspect of a charnel house. Writing to a friend in April 1922, I said: "As regards myself, you wonder how it is that I have served for over twenty years without getting blunted. I think the answer is, that it is in no way necessary for a doctor whose work compels him to look after lunatics to go mad himself. I quite agree that one's position is frequently very trying, and for long I have been convinced that the two secrets of continuing mentally young are: (a) never get obsessed by detail, and (b) never be contented with anything."

Also I was fortunate in having my room next to Holy Harry's, whose work, so far as I could gather, consisted in supervising fortresses which did not exist or which had fallen to pieces. On account of the myths and ruins which surrounded him, he had unlimited time at his disposal, so much so, he informed me one day, that during his first tour of duty at the War Office he had learned Hebrew; during his second he had read most of the books in the India Office library; and now during his third he spent months creeping about the cellars of the War Office reading ancient files. He kept an index of those he considered of interest, and certainly one item he recommended to me, entitled "Sambucus Ebulus Ruber" (I hope this is the correct name), was worth many days of cellar crawling.

One afternoon he came into my room beaming all over. He had been examining the contents of the drawers of a writing-table in an empty room, and, a drawer sticking, he gave it a wrench and found behind it a thick packet of papers in a dusty envelope inscribed in the handwriting

of the old Duke of Cambridge—so he said. The contents are so remarkable that they are worth mentioning.

The papers dealt with the case of Lieutenant-Colonel Durnford, who was killed at Isandhlwana in 1879. In the Official History of the Zulu War he was blamed for the defeat, because of his disobedience to orders, and the orders he is alleged to have received are published in that history.

These orders, it was also alleged, were sent to him by Colonel Crealock, Staff Officer to Lord Chelmsford. In the Parliamentary papers relative to the Zulu War it is stated that Colonel Crealock lost his notebook on the battlefield, and that this book was picked up a few weeks later, and in it the following order, dated “22. Wednesday 2 a.m.,” was found to have been sent to Colonel Durnford:

“You are to march to this camp at once with all the force you have with you of No. 2 Column.

“Major Bengough’s Battalion is to move to Rorke’s Drift as ordered yesterday 2.24th, artillery and mounted men with the General and Colonel Glyn move off at once to attack a Zulu force about ten miles’ distance.—Signed J. N. C.

“If Bengough’s Battalion has crossed the river at Eland’s Kraal, it is to move up here.

“Nangwana Valley.”

Some years after the battle Colonel Durnford’s brother enquired into the case, and from this enquiry it became apparent that a certain Captain O. Shepstone, several weeks after the action had been fought, visited the battlefield of Isandhlwana and removed a notebook from Colonel Durnford’s corpse. Eventually a court of enquiry was held at which Captain Shepstone denied having taken anything from Colonel Durnford’s body. It was the findings of this court which Holy Harry had discovered. Apparently they had been passed to the Duke of Cambridge, then Commander-in-Chief, who, so it seems, not

wishing to involve certain people in a public scandal, refused to take further action, and in place of sending the papers to be registered, tied them up and placed them in one of the drawers of his writing-table.

When Holy Harry told me of this remarkable find, we pulled out all the drawers of my writing-table, and behind them discovered a veritable dustbin full of papers, among which was one written by a Colonel in 1875, a pitiful claim for increased pension. Holy Harry, who had a keen sense of humour, at once answered it as follows: "I am commanded by the Army Council to inform you that a slight delay has occurred over your appeal. The Council, however, are still giving it their careful consideration, and hope at an early date to communicate their decision to you." This was made out in official form and posted; but whether it ever came back through the Dead Letter Office or was answered we never heard.

Last of all, before I left I was fortunate in being notified of my next appointment. General Sir W. Edmund Ironside, then Commandant of the Staff College, asked for me as a Chief Instructor, an appointment I was delighted to accept, especially as in his letter to me he said: "All work must be with a view to *future* war."

On July 21 I went over to France, and the next day attended the unveiling of the Tank Corps Memorial on the Posières Ridge, where all my troubles had begun. On the 31st I handed over S.D.4 to Colonel C. P. Heywood, and then went down to the Senior Officers' School and lectured the students on "The Future of Tank Warfare." Consequently, my first tour of duty in the "War House" may rightly be said to have expired in harness.

CHAPTER XVII

A WANDERING STUDENT

AFTER four years at the War Office it was a delight to get away from its hair-splitting arguments, and once again to be free from the everlasting financial quibblings of men who no more understood the needs of the soldier than they did the ways of the ornithorhynchus. So Sonia and I packed up, little realising that we were now about to set out on a period of wanderings which was to last for eleven years. A period of such little importance, that so far as I myself am concerned, I should have done far better to have lapsed into civil life. The great adventure was at an end, and never again in my lifetime, so I felt, would destiny demand that I should take part in another.

From the War Office I started my wanderings by being attached to a French Division at Valdahon, after which Sonia met me at Basle and we went on together to Austria, where I finished writing my book *The Reformation of War*. Then, at the end of the year, we travelled through Germany back to England, so that I might take up my Camberley appointment in January 1923.

There, as I have mentioned, Sir Edmund Ironside was Commandant. I knew him fairly well, for we had been students together at the Staff College, and off and on I had met him during the war. On account of his size he was universally known as "Tiny"—as a matter of fact, he weighed very nearly twice as much as I did. But this physical difference was of little account, for mentally we were complementary. What I lacked he possessed; consequently, our collaboration, whatever it was worth, was as near perfect as it could be. Though he gave me a free hand, he never failed to command, and to me it always

seemed that, in spite of speaking sixteen languages, his most remarkable gift was that he could command without showing that he was commanding—there was never any crashing-in of the gears.

Fortunately six months' half-pay had enabled me to think over what I should do, and I am afraid I rather offended my predecessor by replying to his question: When did I intend to take over from him? that I did not intend to take over at all. Though I omitted to say so, my intention was to start with a clean slate. I did not want old schemes to amend or old lectures to re-hash. So, when the time came, I entered my office, rang the bell, and to the consternation of the head clerk asked him to have all papers, documents and schemes removed and burnt. And I sincerely hope that my successor did the same.

I then outlined a new series of outdoor and indoor exercises, a single old one on trench warfare being retained. Of lectures I must have given well over a hundred on separate subjects, for about eighty I find have survived the ravages of time. Of these I intend only to quote from one, the first I gave, because it shows fairly clearly the psychology upon which my system of instruction was founded. This lecture I divided into four parts—"Instruction," "Knowledge," "Judgment" and "Method"—and began by saying:

"To-day we meet together as students, and it is only through mutual loyalty to each other that we shall profit by the work which lies before us. . . . As the director of your studies, the ideal I intend to aim at is that we shall teach each other; first, because we all have a vast amount of war experience behind us, and secondly, because, in my opinion, it is only through free criticism of each other's ideas that truth can be thrashed out. Mere swallowing of either food or opinions does not of necessity carry with it digestion, and without digestion swallowing is but labour lost and food wasted. . . . During your course here no

one is going to compel you to work, for the simple reason that a man who requires to be driven is not worth the driving. . . . Thus you will become your own masters, and until you learn how to teach yourselves, you will never be taught by others."

The bulk of military knowledge, I pointed out, was contained in military history, in our personal experiences and in the conditions of everyday life. As regards history, I said: "It is just as easy for you to study it as for your instructors." I accentuated, however, "that whilst materiel is always changing, nerves remain constant"; consequently the more permanent lessons we learn from history are of a moral or psychological kind. Then I went on to say: "In order to understand war . . . you must understand peace: the psychology of the people, their customs, traditions and character; the nature of their institutions, their industry, commerce, politics and finance. For us the understanding of the meaning of Empire and acquaintance with its foundations are all-important; for unless we possess this general knowledge, which goes to build up British civilisation, we cannot become worthy guardians of British rights and ideals."

Turning to judgment, I said: "All the knowledge in the world is useless unless you can apply it, for it will prove misleading. To judge is to decide between respective values; consequently, analysis is the first requirement. By analysis we discover what are the simplest component parts of a problem, idea or thing . . . then we can arrange them in order and by examining the influence of each on each, we begin to build up a logical synthesis of the whole and arrive at true values. . . . The majority cannot learn; therefore be one of the minority. Primitive man does not think at all unless by the direst necessity he is driven to do so; consequently, do not hark backwards, look forwards. Liberate your thoughts from customs, traditions and shibboleths; learn to think freely, not

imitatively or anarchically, and, when anything appeals to you or displeases you, do not accept it at its face value; but examine it, criticise it and discover its meaning and inner worth. Remember that every student has much more to unlearn than to learn, and that he cannot learn freely until he has hoed the weeds of irrational thought out of his mind."

On the subject of judgment I concluded by saying:

"There is a word in our language which I believe to be the most potent word in the dictionary. So that you do not forget it, I have written it on the blackboard—it is the word WHY. Whatever I say to you, whatever your instructors say to you, whatever you read, whatever you think, ask yourselves the reason why. If you do not do so, however much you may strive to learn, you will be mentally standing at ease. Remember this: your brain is not a museum for the past, or a lumber room for the present; it is a laboratory for the future, even if the future is only five minutes ahead of you; a creative centre in which new discoveries are made and progress is fashioned."

Method, I explained, was laid down in the Training Manuals, which were written not for sages, but for normal men, many of whom are fools. Though they must be followed, "do not imagine for a moment," I said, "that they have been written to exonerate you from thinking." I then ended as follows:

"You have come here to acquire knowledge, to evolve it and to fit it to the men you will one day either command or administer. Knowledge is not only acquired in the lecture-room, but also in the mess and in your own private studies. Nothing clarifies knowledge like a free exchange of ideas; consequently, because I happen to be a Colonel and you a Captain or a Major, do not for a moment imagine that rank is a bar to free speech. If you disagree with me or the views of any of your instructors, openly state your disagreement; for we are all

students, and the man who cannot change his opinions has mineralised his intellect—he is a walking stone.”

I have copied out these extracts because they make clear, as I have said, the psychology of my work. I knew my system to be unconventional, yet I also knew that without freedom of thought there could be no breaking away from the parrot-house methods of the past. That “walking stones” abounded I very soon discovered; for at the close of my first year I set together a series of my lectures in book form, under the title of *The Foundations of the Science of War*, and asked of the War Office permission to publish them. This was refused, not on the grounds that they in any way contravened the *King's Regulations*, but because Lord Cavan, who had, in February 1922, succeeded Sir Henry Wilson as C.I.G.S., objected to Staff Officers writing books. As the century I was living in was the twentieth and not the tenth, this seemed to me a most antiquated reason; consequently, I asked for an interview with the C.I.G.S. He received me on November 5, an appropriate day for an upheaval, even if of a minor kind, and after some rather nervous preliminary greetings he informed me that it was contrary to discipline for officers on the active list to publish books, because young officers might read them and they might not agree with the Manuals. He said: “On principle I consider that no officer on the active list should be permitted to publish any book on a military subject. I cannot enforce this as regards the Army generally, but as regards General Staff officers I intend to do so, and whilst you are at the Staff College I cannot give you permission to bring this book out.”

Comment is needless—but, really, what was I doing in the Staff College, and what was the Staff College for? I felt it ought to be turned into a Trappist Monastery. Imagine a surgeon, a lawyer, a chemist or an engineer objecting to active members of his profession writing a book for other members to read! Was I living in the Stone Age,

or the machine age? Nevertheless, this small incident, I think, more so than any other, brought me to realise how far I had outgrown the Army, and though I enjoyed the work at Camberley, I asked to have my four years' appointment reduced to three. Anyhow, four years is far too long in an instructional establishment, let alone one where to read books on the subjects you are taught or are teaching may be considered a breach of discipline.

In the summer of 1925 a friend of mine, presumably, must have written about me to General Sir George Milne, for in his reply to him he said: "Don't let Fuller leave the Service—we shall want his brains." This was most flattering, especially so as Sir George had but recently been selected to succeed Lord Cavan as C.I.G.S. Then, on August 24, I received a rather apologetic letter (why I cannot imagine) from the D.S.D. asking me whether I would favourably consider the appointment of Military Assistant to the C.I.G.S. Apparently General Milne had asked for me; in any case I could see nothing but honour in accepting such an appointment, and I did so.

Next, in September, came Army Manœuvres, the first since the close of the war. Throughout them I acted as bear-leader to the Secretary of State for War, and in one of our peregrinations we came across General Milne standing by an experimental self-propelled gun. I introduced myself, and he seemed pleased to meet me, and said he was glad to hear that I was coming with him to the War Office. He then pointed to the self-propelled gun and said: "That is the thing we want." To which I replied: "Yes, sir, but it ought to be armoured in." To which he said: "No, not yet; you must proceed cautiously, otherwise you will frighten people." I have always remembered those words, and when I got to know him better, they became unforgettable.

Next time we met was early in October at the Travellers' Club, where he had asked me to lunch, and whilst talking he referred with high approval to an article entitled

“The Manœuvres and their Lessons,” which had appeared in the *Sunday Times* of October 4. Curiously enough, this article happened to be one of the few anonymous ones I have ever written, and though it was moderate in tone, its ideas were certainly not those of the professional soldier, for one remark I made was that infantry was no longer the arm which wins battles, and another that regimental officers were fretting for “decision and vigorous leadership.” Sir George bade me study this article carefully, as it closely reflected his views. On the whole, the manœuvres, I think, shocked him; certainly they would have shocked those responsible for them had they been actual operations.

I did not see him again until February 19, 1926, when we met at the War Office. There I at once felt that at last the Army had a chief who would really take control. But before I describe how he set to work, I must, in order to establish a background, sketch in what had happened immediately before he became C.I.G.S.

Lord Cavan, whom he replaced, was a very different man from Sir Henry Wilson. He was a great gentleman, and, as I believe, a good Commander in the field; but from my slight acquaintance with him, I can imagine only that as C.I.G.S. in the War Office he was as much out of place as a nun in a night club. In fact, he was far too honest and upright a soldier to understand or influence politicians. In his own department, his control seems to have been so elastic, that each Director had assumed the powers of a feudal baron. There was no co-ordination and the atmosphere was mediæval. So much was this so that it became apparent to Sir George Milne before he had been twenty minutes in office; for talking to one of the Directors, who more than once referred to the “General Staff,” Sir George, glancing at him, snapped out: “Who is the General Staff?” which so startled the Director, that he himself concisely enough answered this question by saying: “I am the General Staff!” In other words:

“*L'état, c'est moi.*” Here, anyhow, I thought, was a man who intended to be master in his own house.

Having thus re-oriented his department, for the saying “I am the General Staff” went echoing down the corridors, he asked me to draft a memorandum for his signature to the Secretary of State for War, Sir Laming Worthington-Evans, requesting that the Cabinet set down clearly what the object of the Army was; for without the object being defined there could be no co-ordinated reconstruction. This was an eminently sound suggestion, for ever since 1919, though each department in the War Office had been working full time, each had been engaged upon a separate bit of a picture puzzle without even the Government knowing what the picture itself was: in fact, there was no picture, and rightly the C.I.G.S. wanted one so that he might co-ordinate the bits.

The counter-blast which followed this memorandum, and which I personally expected, was normal, though it winded the C.I.G.S. I knew the workings of the Army Council system better than he did. I had watched Sir Henry Wilson treat it as a joke, and Lord Cavan treat it so seriously as completely to fulfil the intention of its devisers, namely that it could effect nothing at all. Now I watched Sir George Milne skip it, and without consulting the Military Members, amongst whom he was but *primus inter pares*, put a straight question straightforwardly before the Secretary of State. I did not know him well enough as yet to doubt that, if one of the three remaining Military Members, the A.G., Q.M.G., or M.G.O., began to ride the high horse, as they were wont to do, and answer him by saying: “As Member of Council, I . . . etc., etc.,” he would not at once thrust his hand under his leg and throw him out of the saddle. I thought that he would, if only because of his “*L'état, c'est moi*” pronouncement. However, I was mistaken, and when the counter-attack took place, as it did a day or two after the memorandum was written, instead of putting the Q.M.G. on the mat, he

suddenly curled up and nothing further happened. Though I cannot say so with certainty, I believe that, as the A.G.'s and Q.M.G.'s appointments were due to expire within a few months, there and then he made up his mind to do nothing until he could fill them with men who in all circumstances would agree with him. Then, as the senior member of a subservient Council, so far as its Military Members were concerned, he would be free, all but in name, to play the part of Commander-in-Chief. In other words, he would be the Army Council as well as the General Staff, and all he would then have to do was to impose his will on the Secretary of State.

It was a bold manœuvre and a perfectly legitimate one had he been the man I at first took him for. Unfortunately he was not, and little by little I began to realise this during my service as his Military Assistant.

Officially my position carried with it no other duties than those of private secretary. Yet, in actual fact, I was far more than that: first of all, as a Colonel I was sufficiently senior to mix freely with the Generals, and sufficiently junior to mix freely with the proletariat of Lieutenant-Colonels, Majors, etc. Secondly, I knew personally more of the officers then holding appointments than did the C.I.G.S., and I certainly knew the machinery of obstruction better than he did. Thirdly, and not least, as I had been selected by the C.I.G.S. himself, I intended to assist him to the best of my ability, and particularly in the modernisation of the Army, which he had given me to understand would be his great work. These conditions forced me more and more from the position of a private secretary into that of an unofficial deputy, which made my work by no means easy, because all the Directors' papers passed through my hands before being seen by the C.I.G.S. himself. I had to be extremely careful not to appear to influence decisions; yet not to influence them at all was in the circumstances impossible; nevertheless, I know that jealousies did arise. Realising this, at one time I suggested

to the C.I.G.S. that what he really wanted was a deputy, who, though not a Member of Council, would deal with all routine work, and so free him for greater things. This suggestion, however, never seemed quite to strike home. Personally I feel that, after his initial rebuff, his mind was firmly set on the idea of creating as rapidly as he could a unanimous Council, when he believed that opposition to his will would become impossible, and that all he would have to do would be to forge straight ahead. I was inclined to agree with him, and still I believe that this method of establishing a dictatorship would have proved successful had he been cast from the mould in which dictators are made. Had he been a man who could follow up audacity and not merely manifest it, he would, I am certain, have become the greatest Chief of Staff the Army has ever had. Furthermore, conditions were in every way favourable for the declaration of a bold decisive plan of modernisation; for whilst, in November 1925, the General Staff had submitted to the Secretary of State a somewhat feeble paper on the reorganisation of the Expeditionary Force, he had capped it by one of quite amazingly progressive intent. All this Sir George Milne knew; consequently, all he had to do was to take the bull by the horns, and then, with the level-headedness and common sense which were his, have boldly solved the problem. That he would have been obstructed by the Military Members is true, but with the Secretary of State on his side he could afford to risk this obstruction.

That he did not do so was a question of temperament. Though dictatorial towards others, he was not a dictator, because his cautious nature for ever stood between him and his goal. And after I had departed—and I say this without any sense of self-flattery—he was left, so far as I am aware, without a single person who could jog him into a decision other than that of a purely routine kind. The initial rebuff he had experienced seems to have persuaded him to seek out not only complaisant colleagues, but

mediocre "Yes-men" as his subordinates. And what was the result? Unanimity was attained, yet the smoother the running became, the more was he isolated. His problem was modernisation, and in the circumstances of our peculiar army system, it could be attained only through violent opposition. Yet his caution prohibited this; and, so it seems to me, ended in his suspecting and then doubting every innovation. What was the final result? That the seven years of his appointment were mainly spent in marking time. Nevertheless, as a man, I have always respected him, and during my fourteen months as his Military Assistant, I can remember but one or two incidents in which I did not whole-heartedly agree with his judgment on minor matters.

The many important problems which at this time passed through my hands, are of too recent a date to permit of mention here; for they still rightly belong to confidential history. There was the general strike in 1926, which came tigerishly and disappeared sheepishly. There was the Shanghai expedition the following year. Yet by no means was all our time taken up with such weighty subjects. For instance, daily the Registry supplied me with a list of "Confidential Important Letters Received," which I delighted to show to the C.I.G.S.; not that he wanted to delve into their secrets, but because they were so unsophisticated. For instance, the subject of one, coming from the G.O.C. the Forces in China, read: "Recommending the substitution of six mules by six ponies on the establishment of the Hong Kong Mule Corps," and another, from the Ministry of Agriculture and Fisheries, was: "Forwarding a copy of a Circular Letter regarding National Rat Week."

I hope I shall not fall foul of the Official Secrets Act if I quote verbatim the following branch memorandum. On March 10, 1926, the C.I.G.S. asked me for a pair of dividers, costing, I suppose, eighteen pence. How did I obtain them? Here is the answer:

1

“ Q.M.G.9.

“ Would you be good enough to obtain a pair of dividers for the use of C.I.G.S.

“ J. F. C. Fuller,
“ Colonel G.S., M.A. to C.I.G.S.”

“ 10th March, 1926.

2

“ X Compass, drawing, shifting leg, double-jointed, II. Q.M.G.F. (b).

“ We propose to convey approval to the permanent issue of a Compass as at X above. Have you any remarks from a financial point of view ?

“ Q.M.G.9 (a).

“ J. GARDNER,

“ 11th March, 1926.

“ For D.A.D.E.O.S.”

3

“ Q.M.G.9 (a).

“ No financial objection. Will you let us have this B.M.¹ again when the Compass has been issued.

“ Q.M.G.F. (b).

“ G. LILLYWHITE.”

“ 15th March, 1926.

4

“ A.D.O.S.P.

“ Will you please arrange issue of a Compass, drawing, shifting leg, double-jointed II. to— M.A. to C.I.G.S. Room 217, War Office. Issue will be permanent.

“ Q.M.G.9 (a).

“ J. GARDNER,

“ 16th March, 1926.

“ For D.A.D.E.O.S.”

5

“ Q.M.G.9 (a).

“ Issue has been arranged.

“ I.O.P.4.D/4186 dt. 18.3.26.

“ H. E.,

“ 18th March, 1926.

“ For A.D.O.S. Provision.”

6

“ M.A. to C.I.G.S.

“ Please let me know when the compass is received.

“ Q.M.G.9. (a).

“ J. GARDNER,

“ 19th March, 1926.

“ For D.A.D.E.O.S.”

¹ Branch Memorandum.

“ Q.M.G.9 (a).

“ Compass received, thank you.

“ J. F. C. FULLER,

“ 24th March, 1926. “ Colonel G.S., M.A. to C.I.G.S.”

These seven brief minutes are so ingenuous and so lacking in humour—the pontifical “ We propose to convey . . . ” the “ No financial objection . . . ” the mysterious “ I.O.P.4.D/4186 dt.” (dt.—yes!) which seems to have so exhausted its writer that he had no energy left to sign his name in full—that the profound significance of this correspondence is apt to be overlooked. Here is the most important soldier in the Empire asking for a pair of dividers. Sanity suggests that some department should have been able to provide them in five minutes. But no! He had to wait fourteen days, and their value could not be more than eighteen pence!

Let us suppose now that, in place of dividers, the C.I.G.S. had asked for a Mechanised Division costing a million pounds. Then it will at once be realised how long he would have had to wait. This is why it is not reasonable to expect any C.I.G.S. to accomplish anything worth accomplishing during the four years of his appointment. Therefore, can we really blame Sir Henry Wilson for his harlequinading, or Sir George Milne for marking time? Is it not the system we should blame—“ Gardner—Lillywhite—H. E. and Co.,” and the scores of these ink-slinging little fraternities which go to build up the machine? Each is like a yard or two of thread, which, when the spindles are set in motion, weave a net from which an intellectual rhinoceros can find no escape.

Yet in spite of that mysterious god of provision—“ I.O.P.4.D/4186 dt. 18.3.26,” when Sir George Milne took office he was bent upon modernisation, and one of the first questions he interested himself in was the reconstitution of the old Experimental Brigade. In May he asked

me to collect opinions on this subject, and ascertain what arms we could assemble on Salisbury Plain, after which I was to put up my suggestions how best they could be grouped. This I did, arranging the total arms in three groups as follows:

Group A.—One Tank Battalion, one Armoured-car Company and one Battery of self-propelled guns. This group to represent the spear-head in field warfare.

Group B.—One Battalion of infantry carried in cross-country machines; one Machine-gun Battalion carried in machines; one Battery or Brigade of dragon-drawn artillery; one Squadron or Regiment of cavalry and one R.E. Company carried in machines. This group to represent the spear-head for fighting in mountainous country and to provide A with a tactical base of action.

Group C.—Three Battalions of infantry.

I pointed out that I considered Group C to be redundant, and I said: "The Brigadier cannot efficiently supervise its training, etc., and that of the Experimental Formation. The first thing Sir John Moore did in 1803/4 was to get rid of every officer and man he did not require for his Model Brigade—we should do likewise. Failing this, the Brigadier must be given a Second-in-Command to relieve him of supervising Group C." I also urged that no units of the Brigade should be called upon to send drafts overseas; for if this were done, it would vitiate all experimental work.

The C.I.G.S. agreed to Group A; against Group B he wrote: "For later consideration"; and against Group C: "Not required." Therefore all that was wanted was to assemble Group A, house it and select its Commander; incidentally, none of its units would have to provide drafts.

Though Clausewitz has said that "in war the simple is always difficult," he should have added "in peace it is generally impossible." Here was the simplest of simple problems, and it was passed for solution to the D.S.D.'s

Department. There it was rapidly complicated. In June the C.I.G.S. pointed out that to begin with infantry would not be required, and that his idea was not to form a Light Division, as the French were doing, but the embryo of a new mechanised fighting force. Further, he said that it must be "very small" to start with.

July was spent on financial wrangles. Then came August and holidays, followed by September, in which recovery from holiday-making occupies most of the time; when quite unexpectedly, one morning towards the end of that month, the C.I.G.S. said to me: "I am going to send you to India."

"To India?" I exclaimed, much surprised.

"Yes," he replied; "but on a visit only."

I knew for some time past that he had seriously been considering conditions in India. He realised as clearly as anyone that we at home were no more than a depot for that country, and that if the Army in India would remain in the Middle Ages, we should have the greatest difficulty in creeping out of them. I knew also that he had been contemplating sending an officer out there, and I had suggested the name of Colonel Lindsay. Now he had made up his mind, and I was to be the victim.

My mission was communicated to Finance, who informed me that there would be difficulty in getting me a berth on a Trooper. To which I answered: "Don't worry over that," and placed a slip of paper before the pundit, on which was written:

"Taxi from house to Victoria; Pullman from Victoria to Dover; 1st Saloon—Dover to Calais; Blue Train—Calais to Marseilles; 1st Saloon and single cabin on P. & O. *Kaiser-i-Hind*. Ditto return."

"But," he gasped, "it is impossible."

"Very well," I replied, "you had better go and explain that to the C.I.G.S."

Thus the impossible was accomplished in three minutes; but I could not help feeling that the idea of my travelling in a Pullman very nearly broke his heart.

I was to leave London on October 7, and about a week before this I asked the C.I.G.S. what he wanted me to do in India; but he waved me aside, as he was busy. A day or two later I asked him again; but he was busier still. Lastly, on October 6, I said: "Can you give me the points you want me to report on?" To which he replied: "You know all my ideas, so carry on."

To me this was a delightful position to be in: here was I going out to India as a representative of the C.I.G.S. without an idea in my head of what he wanted me to do. In the comfort of the Pullman I made up my mind: I would be vice-C.I.G.S. and would reduce Delhi to a cold sweat. Anyhow, that would be amusing.

I arrived at Bombay on October 22, and in all essentials found India exactly as I had left it twenty years before: a land in which time is eternity and space is dust. I went straight to Delhi to find that the Commander-in-Chief, who had been warned of my approach, had gone off to Assam on a walking-tour, and that the C.G.S., Lieutenant-General Sir Andrew Skeen, was expected from Simla the following day.

When Sir Andrew arrived, I found him to be a super-charming man, and as a Crusader he would have looked superb in chain armour. I soon discovered that he possessed a profound knowledge of India and of Indians, but that his understanding of modern warfare was all but a blank. He was so completely wrapped up in mountain warfare that, strategically, I felt he was scarcely on speaking terms with anyone unacquainted with the topography of the Frontier. At once I realised that whatever arguments I might use, they would cut no ice until I had seen half the hill-tops in Asia. So when he suggested that I should see these mighty mountains, I agreed forthwith, realising that on my return I should be

in a position to speak to him with some semblance of authority.

My tour was fixed between October 31 and November 29, and during this period I covered some fifteen to sixteen hundred miles by car. Roughly my journey worked out as follows. First half: From Nowshera through the Malakand Pass to Chakdara; Peshawar round Mohmand Line—Michni, Shabkadr, Abazai; Peshawar through the Khyber to Lundi Khana and back via Fort Bara; to Kohat, thence to Fort Lockhart and via Gulistan and Shinawari to Fort Thal; Thal to Parachinar; Parachinar to Kohat; Kohat to Bannu; Bannu to Razmak; Razmak to Jandola, thence to Sarwekai and back to Jandola; Jandola to Dera Ismail Khan; Dera Ismail Khan to Rawal Pindi. Second half: Rawal Pindi to Lahore; Lahore to Sibi and through Bolan Pass to Quetta; Quetta via the Khojak Pass to New Chaman; New Chaman via Pishin to Hindubagh; Hindubagh via Kila Saifulla to Loralai; Loralai to Harnai and back; Loralai via Ziarat to Quetta; Quetta to Delhi.

It was certainly a vastly interesting journey and definitely confirmed my views that, once a series of main thoroughfares was driven through the country, the policing of the Frontier would become a comparatively simple problem; for, as everybody knows, the fundamental difficulty in wars in uncivilised countries is supply. When lorries can be used, this difficulty is reduced by, I should say, 90 per cent. Not only can the loads be increased in size, but the supply columns reduced in length, and, whilst formerly the tail of a long camel column began only to advance after its head had reached its destination, it was now possible for a column of lorries to move off in a few minutes and in eight hours cover ten times the distance. For example: Bannu is, I believe, some eighty miles from Razmak, and to-day 200 lorries can move from one to another in eight hours and carry 600 tons of supplies. Should 2,000 tons be required for, I will suppose, four months, then all that is

necessary is to picket the road for three or four days, after which, except for the permanently fortified posts, all pickets can be withdrawn for four months and the road patrolled by armoured cars.

Once off the road, pack transport may have to be resorted to; but even then, as the main lines of advance will be up the nullahs, pack animals can in most cases be replaced by supply tractors of the Carden-Loyd type. That this is possible I am convinced, because I examined a large number of nullahs and found but one along which light tanks could not operate. In fact, my trip convinced me that the most efficient way of policing the Frontier was by means of lorries and light tanks, and not by aircraft. True, when the enemy takes to the hill-tops, operations become essentially those for infantry to carry out. True, also, aircraft are invaluable for reconnaissance, rapid transportation and inter-communication; yet the butt end of the whole problem of mountain warfare is supply, and the road and the lorry solve that problem.

On my return to Delhi I felt I could speak with authority, not topographically only, but also C.I.G.S.-ically, so I had long conversations with the C.G.S. and with many of the senior officers at Army Headquarters. Time and again I quoted the C.I.G.S. as my authority, thus: "That is the C.I.G.S.'s intention; this is what he insists upon, and that is his considered opinion," etc. I pointed out that if what I had seen was a fair sample of the whole, then nothing outside a complete change of outlook towards command, administration, organisation, tactics and training would satisfy the C.I.G.S.

Alas! nothing much sprouted from these fine words; for though, on my return to London, the C.I.G.S. considered my report, a very full one, to be the most "insubordinate document" he had ever read, and, therefore, one of audacity, his inherent caution blocked the way. Napoleon once said, and surely this is one of his profoundest sayings: "The whole art of war consists in a well-reasoned and

extremely circumspect defensive, followed by rapid and audacious attack." Because of some curious twist in his mental outfit, Sir George Milne inverted this saying, and so completely that he would invariably start audaciously and end cautiously. Could one have turned him mentally upside down, what a superb C.I.G.S. he would have made!

Whilst I was away, the organisation of the Experimental Force was decided upon, and immediately after my return, on December 18, the C.I.G.S. informed me that he had selected me to take command of it. This came as a great surprise, as I was fully contented with my present appointment; nevertheless, I accepted his offer gladly, little imagining that the organisation he had favoured before my departure had been so radically changed as to be diametrically different. Having accepted it verbally, on the 24th I received the customary letter from the Military Secretary, when what was my astonishment to find that it was not the Experimental Mechanised Force which I was to command, but, instead, the 7th Infantry Brigade. At first I thought that there must be a mistake; but soon discovered that the offer was correct, and the reason given me was that I could not be appointed permanently to a Formation which was purely experimental. Then came Christmas, and on the 31st I was instructed to take over my new duties on May 1, 1927.

Out of justice to myself, for later on the most unwarranted gossip was circulated about me, I will enter into some detail as to what followed. During January 1927 I was more than usually busy, and it was not until February 5, after I had heard several disquieting rumours, that I went down to Tidworth and saw Colonel G. H. N. Jackson, then Commanding the 7th Infantry Brigade. What did I discover? That not only was I to command the 7th Infantry Brigade, but the Tidworth Garrison as well, and that no Experimental Force was to be formed; instead, certain mechanised units were from time to time to be allotted to me whenever the G.O.C. 3rd Division saw fit.

In other words, in a more accentuated form than ever were all the mistakes of the original Experimental Brigade of 1921-2 to be repeated!

On my way back I called in at the Staff College to talk the matter over with a friend then on the Staff of that establishment, an officer who had been closely connected with the old Experimental Brigade, and on the morning of February 7, I received a letter from him in which he said:

“ I sincerely hope that you will be successful in obtaining an Area Commandant and a paid Staff Captain for your Command, also a shorthand typist. [These points I had discussed with him.] You will not be able to do justice to your Mechanised Brigade without them, and yet much may turn on your doing so. It would be a thousand pities to spoil the ship for a ha’porth of tar. My reason for writing to you on this subject is that I now remember being told by O’Connor, Brigade Major of the defunct Experimental Brigade at Aldershot . . . that it was just the lack of these items which spoilt the show. O’Connor was expected to send out seventy reports on the Experimental Brigade and had no shorthand typist. Jackson [Colonel H. C. Jackson, who commanded it] was responsible for a lot of oddments which wasted his time: he had no paid Staff Captain, and therefore he and his Brigade Major got tied up in administrative work. The parallel may be useful to you, because if these things hampered the Experimental Brigade at Aldershot, how much more will they hamper your bigger show at Tidworth? ”

This letter made my mind up for me, and though I was loath to bother the C.I.G.S., I decided to see him and trust to his undoubted common sense to set things right. This I did on the 8th, when I explained the situation to him.

I pointed out that of the four Battalions of the 7th Infantry Brigade, one only—the 2nd Somersetshire Light Infantry, which was to be converted into a Mechanised

Machine-gun Battalion—was in any way an experimental unit, and that, therefore, I should be in command of two forces—an experimental one and a normal one. That round this command were, from time to time, to gyrate six of the newer units—a Tank Battalion, an Armoured-car Company, a Brigade of Mechanised Field Artillery, a Battery of Mechanised Medium Artillery, a Mechanised Signal Company and a Mechanised Field Company, none of which was properly organised. How was I to command, let alone experiment, with such an inchoate conglomeration, on the top of which came my duties as Garrison Commander? Then I said to him:

“I feel strongly that my duty is to make this Force a success, because, as you will realise, if I am not successful, every soldier opposed to modernisation will at once proclaim the newer arms to have failed. I consider that it is as important to win over the Army as it is to carry out experiments, and I feel that I cannot accomplish either with the existing Staff and the existing multiplicity of duties. I do not pretend to be a Sir John Moore, who, when faced by a similar problem in 1803, first got rid of all unnecessary officers and men, and secondly established an organisation through which he could rapidly and economically convert ideas into actions. If Moore considered this necessary, it surely is still more so in my case.”

I then asked for the following exceedingly moderate changes:

(1) That I might hand the three Infantry Battalions over to a Second-in-Command or to the senior Infantry Lieutenant-Colonel.

(2) That the Tidworth Cavalry Brigade Commander might be instructed to relieve me of the duties of Garrison Commander.

(3) That I might be given a permanent Staff Captain and at least one shorthand typist.

This was not asking for the impossible; but, unfortun-

ately, the C.I.G.S. was in one of his stubborn moods; all he said was: "Don't be silly!" So I handed to him my suggestions in writing, and without looking at them he placed them in a drawer of his writing-table.

Had it not been so important to get this Experimental Force placed on a workable footing, the whole question would have assumed a purely comic aspect. Here was a man of outstanding ability bent on modernising the Army, and as the Secretary of State for War was a keen modernist he could rely upon his support. This man had selected as the Commander of this Force a soldier who for nearly ten years had been connected with modernisation; consequently, his opinions were worth considering, and if not, then assuredly he was not fit for the appointment. Yet because one of this able officer's departments had completely bungled the organisation of the Force, rather than accept three perfectly sensible amendments, this bungling was to stand. That was my reading of the C.I.G.S.'s conduct.

For a week I said nothing, when one morning I asked the C.I.G.S. whether he had considered my paper; to which he answered that as yet he had not found the time. Then, on February 15, I wrote a letter to the G.O.C. 3rd Division, hoping that through his mediation I might get the C.I.G.S. to see things a little more rationally. On the 18th he replied, his letter clearly expressing what he thought. He said that it was neither his business nor mine to notice what had occurred in the House, in the Press or at the Imperial Conference. The fact was that certain mechanised units were being incorporated in his Division and that the 7th Infantry Brigade would form the "nodal point" for experimental work. Then turning to myself, he informed me that I was being invited to come to his Division as one of his Brigade Commanders, and that I was not required to tie a wet towel round my head and evolve a new military heaven and earth. Finally he said that he had a weakness for running his own show, and that,

when I came to him, I should do so with a realisation of my good luck, and "an appreciation of the privilege of commanding troops—even infantry!"

This letter, though a little moodish, showed quite clearly that in the eyes of the G.O.C. 3rd Division, I was to be nothing more than an Infantry Brigade Commander. To this I in no way objected so long as I was not responsible for the Experimental Force.

Then, on March 3, the Secretary of State said in the House: "Arrangements have been made to assemble in the Salisbury Plain area an experimental mechanical force, composed of entirely mechanised units . . . whose primary function will be to study the tactical employment and the organisation of a highly mobile force of this nature. It is hoped that by the end of the year considerable progress will have been made." Next, on the 7th, in his speech introducing the Army Estimates, he was even more explicit: "An experimental force is being formed at Tidworth composed of completely mechanised units. It comprises one tank battalion, one armoured-car company, a field brigade R.A., a pack battery R.A., a field company R.E., a signal unit and one infantry machine-gun battalion. This force will be placed under the command of an officer who has made a special study of mechanical warfare."

With the first of these utterances and the 3rd Divisional Commander's letter before me I made up my mind. I asked the C.I.G.S. again whether he had considered my suggestions. He replied that he had not and did not know where the paper was. I then said: "It is in the third right-hand drawer of your writing-table." As he still refused to consider it, I left the room and wrote out my resignation, because I felt that it would have been a fraudulent act on my part to fill an appointment which in no way resembled the one made public by the Secretary of State. Whatever my faults were, I was not disloyal, yet this was the crime which has since been imputed to me.

My resignation fell like an exploding bomb—the War Office was upheaved. On March 7 I received the following letter from a highly placed officer, whom I will call X:

“I have heard with absolute consternation that you have sent your papers in, and I am writing to beg you to withdraw them—and you are the *only* man in the whole Army to whom I would make this request. Your going would not only be an irreparable loss to the Army in itself—greater than *anyone* else’s going would be—but I am quite certain it will also do the C.I.G.S. a great deal of harm amongst the younger and the progressive school in the Army.

“In my opinion, if you have any affection for the Army, which I know you have, you should put yourself without reserve at the disposal of the C.I.G.S., and carry on for at least a year in whatever billet he wants you for; after that you can reconsider the whole matter.

“We cannot afford to lose men like you. Do think this over.”

The next day I received a nice letter from the 3rd Divisional Commander. It began: “I am really distressed at your decision; I hope my letter to you did not contribute to it in any way.” And it ended: “Again, Boney, I am deeply distressed at your decision—which I never expected.”

I am afraid that his letter of February 18 did contribute to my decision; but for that I bear him not the slightest ill-will. This day I wrote fully to X, who, in his answer to my letter, replied: “I quite understand that, feeling as you do, you cannot accept the command of the Tidworth Infantry Bde. in view of what you have told me.” Then, on the 18th, this very good friend wrote again saying: “The Chief, I know, feels, and I agree with him, that he can do *nothing* as long as a pistol (in the shape of your application to retire) is presented at his head.”

On receiving this letter, I showed it to the C.I.G.S. and said: "When I submitted my resignation, it never entered my mind that my action would be looked upon as a threat. I took this course because I failed to see what other I could adopt without appearing to bargain. If you assure me that your intention is to modernise the Army, then I am perfectly willing to withdraw my resignation; but if it is not your intention to do so, then it must stand." He assured me that it was his intention, and shook hands with me, which appealed to me as a very friendly act. I returned to my room and withdrew my resignation on the agreed condition that another officer be found to command the 7th Infantry Brigade.

In its place I was offered the appointment of G.S.O.1 to the 2nd Division, and as it was then commanded by General Ironside, I was, of course, delighted to accept it. Everything now appeared to be smoothed out, when, on April 9, my appointment to the 7th Infantry Brigade was cancelled and, on the 21st, an announcement was made in the Press that my place would be taken by Colonel R. J. Collins. Then, on the 22nd, the best part of a column appeared in the *Daily Telegraph*, headed "An Army Mystery," asking whether the scheme had broken down. This article was a sober and straightforward one. Next, on the 26th, a very similar article appeared in the *Westminster Gazette*, but under a terrific headline—"Mystery of the Mechanical Army." The fat was now in the fire, and the Secretary of State, I was informed, was thrown into a towering rage. He stated that he had been misled; that the nation expected an Experimental Force and not an Infantry Brigade nicknamed as such. The upshot was, that Colonel Collins received far better terms than I had ever dreamed of asking for.

Thus ended this really stupid affair. To me its sole pleasant remembrance is, that I parted from the C.I.G.S. on terms of complete amity. That he bore me no ill-will I am certain, for not only did he write several times to me

after I had left; but one day, when visiting Aldershot, he came round to my office to have a chat.

Here I may as well end the episode of the Experimental or Mechanised Force or Formation, for it had several names. It was formed, and on September 8, 1927, the C.I.G.S. went down to Tidworth and gave to it one of the most progressive addresses that British soldiers have ever listened to. He took as his text 1 Corinthians xiv. 8—“For if the trumpet give an uncertain sound, who shall prepare himself to the battle?” and from that moment onwards the trumpet ceased to sound altogether; for though this Formation, rechristened “The Armoured Force,” struggled through the training season of 1928, it expired ignominiously towards the close of that year.

So-called Experimental Brigades (Infantry Brigades plus a few Carden-Loyd machine-gun carriers) kept the idea simmering on until the spring of 1934, when the 1st Tank Brigade, a completely mechanised formation, was formed on a permanent footing. Yet strange to say, when in September this formidable and supremely powerful instrument took the field, the infantry of the 1st Division, supported by a Cavalry Regiment and a few aeroplanes, rounded it up and then annihilated it! Was this *pour encourager les autres*? I do not know; but to me, then done with our funny little Army, it seemed a comic ending to all my endeavours and tribulations. Curious also, the troops which accomplished this astounding feat—surely the most amazing ever witnessed during peace warfare—were under the direction of my friend the 3rd Divisional Commander of 1926 and now the G.O.C.-in-C. Southern Command. No wonder he had written that it was a “privilege to command infantry.”

Aldershot and the 2nd Division were a great relief after the turmoil of the War Office, and the somewhat unpleasant transformation scene which had ended my second tour of duty there. It was almost like going into a monastic retreat, because yearly Aldershot is wound up

like a clock, and it ticks out such perfect military time that there is never a moment to spare in which to improve things. Besides, the 2nd Division was a truncated formation, the 4th Guards Brigade were in London, and part of the artillery in Brighton and Catterick; also, at this time, the 5th and 6th Brigades in Aldershot and Blackdown were both commanded by soldiers senior to myself, and men who rightly would not have appreciated interference; then, again, there was nothing to interfere about.

I spent my mornings in the office answering correspondence which any schoolgirl could have dealt with, or else riding around, which was nothing more than exercise, and the rest of the day in probing deeper and deeper into the philosophy of war. At this time, as at the War Office, I did a lot of lecturing, and I produced one or two books and many articles. As regards training, my sole contribution was that, with the assistance of Ironside, I smashed the conventional Red *v.* Blue, North *v.* South Schemes. Those dull and uninspiring exercises were devised to illustrate some platitudinous remark in the *Field Service Regulations*, such as: "The object of this exercise is to prove that 'time spent upon reconnaissance is seldom wasted.'" To me, as to Clausewitz, "war lies in the realm of chance"; then, surely, should peace exercises lie there also. Every problem, I held, is a new picture, yet set in an old frame—the principles of war. Peace exercises should, therefore, test out wits, and not merely knowledge of the regulations. The unexpected is, consequently, their essence; and to make certain of the unexpected, all that is necessary is to arrange a clash, and then leave it to Commanders to fight it out; not to win, but to prove which of the two is the liveliest man and can apply the principles in the liveliest way.

We initiated this system of live manoeuvres in the Thame district, establishing our Headquarters in John Fothergill's most unconventional of all inns—"The Spread Eagle." The following year we reduced it to a fine art

in Sussex, and though this may appear boastful, everybody heartily enjoyed their fortnight's divisional training, except perhaps my groom, who one day I overheard saying to my batman: "There's nothing wrong with the troops; but there's something bloody well wrong with the Staff," by which I presume he meant me.

Again, why should manœuvres be dull?—they are not funeral processions. Here is a "Special Idea" made out by me for divisional training in September 1929—when I turned Aldershot into an island:

"On 22nd August, on his seventy-fifth birthday and after an exceptionally good lunch, Field-Marshal Lord Darnit, Commander-in-Chief of the Northern Army, sent for Brigadier Hayter (5th Infantry Brigade). On the Brigadier entering his room, he turned to him and said:

"Take a chair, my boy . . . sorry to trouble you, but old Bonzo (the Prime Minister) has just gone off the deep end. Got the wind up properly this time over the Cron-dall mines. Some Jew stunt, I guess, to send the shares up, but there it is and you are for Aldershot. Won't be long there . . . the whole idea is absurd . . . the enemy can't land, but there it is. . . . Politicians, financiers, Jews!

"I am sending your Brigade over in two days' time with some cavalry and guns. They want me to send Trotsky (6th Infantry Brigade Commander) as well, but I am stopping him and his tin pots (Carden Loyd pseudo-tanks) at Reading. I should like to know who is commanding this army . . . splitting it up like a bridal cake.

"You will be landed at Blackdown and will take over the old barracks at Farnborough . . . nasty place, wouldn't have been a camp otherwise. Make yourself comfortable there, and then stroll round the mines and send the shares up. Anything you would like to ask?"

"*Brigadier Hayter*: 'Well, sir, am I to put the mines in a state of defence?'

"*Lord Darnit*: 'Damn it, man, damn it, that will send the shares down! Why, old Bonzo, if he hears that the

place is entrenched, will imagine it threatened and send half the Army there. Damn it, man, none of this trench-warfare business. Should the enemy land, which he won't, get in front of Crondall and push him into the sea.'

"*Brigadier Hayter*: ' Might I ask, sir, what is known of the enemy ? '

"*Lord Darnit*: ' Damn it, man, how should I know ? Some Guards, I believe, tattoo troops, nothing else . . . won't leave Portsmouth . . . girls too pretty there. Now, my boy, don't get the wind up.'

"*Brigadier Hayter*: ' No, sir, but could I have a few tanks ? '

"*Lord Darnit*: ' Tanks be damned . . . fancy troops ! If you get into difficulties, and you seem to like them, I will send Trotsky over to you with his kettles, then you will have tanks enough ; and if you meet them, here is a sound piece of advice : Keep our head and move to a flank ! ¹ Now good day to you, and no more difficulties . . . have got a little appointment at the Piccadilly Hotel.' "

Lord Darnit suddenly dies of apoplexy (most of our Generals do) and the muddle begins.

It may be thought that this is sheer fooling ; but, in fact, it is highly realistic, and in substance embraces Lord Kitchener's instructions to Sir Frederick Stopford before he sailed for Suvla Bay, as Sir Frederick once wrote to me.

Anyhow, whatever our training was worth, it was one up on that in India ; there, as two separate writers informed me, it was as follows :

" I am in the midst of Inter-Brigade manœuvres here [Peshawar]. . . . I'd have given anything to have had you beside me this morning, when my car got held up on one side of a steep nullah by the Brigade transport falling back in advance(?) of the retiring Brigade—A.T. cart after A.T. cart with its pair of mules and little drivers perched on top struggled manfully or mulefully up the gradient

¹ These are Ludendorff's words.

out of the nullah—hundreds of them. Then they began to arrive mixed up with the head of the retiring infantry. Finally came an old ox ambulance and a tonga with a half-dead pony hotly pursued by a Field Battery trotting hard. In the steepest and narrowest part of the track the old biles [oxen] sat down and refused to budge. The tonga tried to pass and fell over on top of the biles with all its load. Then arrives the Field Battery complete with irate Major, who uses all the language I've ever heard—and more. That failing, he sends half a dozen gunners up, in their efforts to clear the road only turn the tonga over and worse than before. Next a pair of leaders from a gun team are brought up and hooked in somehow into the biles' harness. With a good heave off they all go, biles, ghari, tonga, pony, all in an inextricable mass to the top of the slope. Follows a heterogeneous mass of Battery, tonga and infantry—time wasted fifty minutes. Tragedy or comedy, which is it? Anyhow, that's our modern transport in India, and God help us if we have to use it. . . .”

“ There followed a Divisional Exercise without troops, and a Divisional Signal Exercise without signals, at which the Army Commander was present. This again was followed by an Artillery Concentration without guns—the whole lasting for three weeks.

“ The Army Commander again appeared for the latter; the distance he travelled on each occasion from Poona and back again is some 600 miles.

“ These feats having been accomplished, we all went to Poona for a war game—another 600 miles. The war game was an Armoured Force pitted against an ordinary army (which was us), who had no possible means of defending ourselves against it. However, the Armoured Force was so badly commanded that we were able to bring its activities to nought.

“ On the last day I was hurled from a horse that had never had a white man on its back before. I told the Brigadier what I felt about it, and he replied that it was a good thing to make Staff Officers ride! And all this at

the age of fifty-one after thirty-one years' service. India is mad; but I believe that the answer is 'travelling allowance.'

"My General is always accompanied by a satchel containing all the training manuals—every one of them—the A.D.C. carries them up to the top of the most precipitous heights, where they are consulted.

"After a long and hot ride across the rock-bound terrain near Poona the other day, the General asked me what I thought about Indian soldiering. I replied that I had not experienced much of it. But that if what I had seen was a fair sample, it left me very hot physically and very cold mentally. . . ."

To this inert land for which the home Army is raised and in which it is sunk, Ironside went towards the end of 1928 to take over command of the Meerut Division, and Major-General T. A. Cubitt reigned in his stead. Had it been anyone else, probably I also should have gone, for the work I was doing hardly justified my pay. But soon I found Cubitt to be a refreshingly unconventional soldier, the real fighting-man type, who called a spade a spade and something more; he was full of common sense and outrightness. I must say, when I look back over my thirty-five years' service, I had been exceedingly fortunate—there was scarcely a General I had served whom I would not gladly serve again.

So I stayed on with the 2nd Division until the summer of 1929, when I was offered command of the 2nd Rhine Brigade at Wiesbaden. This I accepted, and, in July, took over a four-years' appointment which lasted not quite three months; for, in October, we evacuated Germany. Then I was given command of the 13th Infantry Brigade at Catterick, a spot defined by the Romans as "*Ad Fines*" and by most private soldiers as "the bloody limit"—so little does military psychology change.

Here I carried out such training as was possible, and on the same lines I had assisted in inaugurating at Aldershot.

I remember one Brigade exercise which I based on McClellan's Peninsula Campaign of 1862: Richmond, Yorks, represented Richmond, Va., Halfpenny House-Yorktown, and we used lorries for transports. As many of McClellan's men stuck in the mud of the Chickahominy, so thirteen of my tanks floundered into the bogs of Stainton Moor Beck. Cartographically, at exactly the right spot; thus did history repeat itself. During the winter outdoor exercises were impossible, so I gave all the officers of my Brigade a series of lectures on "*F.S.R.II.*" They differed from ordinary lectures in that, from time to time, I would pause and, naming for choice a particularly sleepy individual, would question him on what he thought of my argument. And to prevent his always agreeing with what I had said, I would now and again say something I knew to be questionable, because my hidden object was to persuade my officers to criticise my ideas.

Catterick, like Wiesbaden, was little more than a halting-place, for though my appointment was again for four years, one year saw it at an end. On September 14, 1930, I was promoted a Major-General, so it came about that, towards the end of October, Sonia and I packed up once again, and, on November 1, scraping the mud of Catterick off our shoes, we sped southwards to civilisation and towards freedom.

Being on half-pay and having as yet no fixed abode, in December we decided to go to Switzerland and take up skiing, and it was on one of those superb and indescribable Swiss mornings, with snow three to four feet deep, that a letter arrived marked "*M.S.I.*" It was handed to me just as we were going out, and tearing it open, I found it was from the Military Secretary, notifying me that I had been selected "for command of a 2nd-Class District in India"—but which? It was too enticing a day to waste in solving this conundrum, so I left the problem over until our return. Fortunately I had with me an "Army List," and from it I soon discovered that this mysterious 2nd-

Class District was Bombay; because in the letter the date of my appointment was November 11, 1931, and the "Army List" told me that that was the date upon which the present occupant would vacate this second-class affair. Why the place was not mentioned I do not know, but possibly Bombay was not over-popular.

What else did the "Army List" tell me? That my command consisted of an A.A. Battery, a Heavy Battery, one Battalion of infantry, a R.A.M.C. Company and a Deputy Assistant Director of Pathology. Was this, then, a pathological problem? The answer is "yes."

Let me explain this. The object of a soldier is *usefully* to serve his country. Therefore the duty of the Selection Board is to see that officers are so placed that their individual talents and abilities are made the most of. It is, of course, a difficult problem, but not so difficult as it may at first seem, because 90 per cent. of our officers may be classed as normally conventional. I did not fall in that class. For fourteen years I had directly or indirectly been connected with mechanisation, and at the end of 1926, as I have described, I was personally selected by the C.I.G.S. to command the Experimental Force; why, then, was I now selected, not only for the worst appointment in India, but for an appointment in which such talent as I possessed would be utterly wasted? If it was a carefully considered selection, then, in my opinion, the Selection Board was guilty of disloyalty to the country; if it was a haphazard selection, then its members were not fit for their job.

I did not object to serving in India or even to being offered the worst district in India, a district admirably suited to a sort of Gigolo-Joseph Lyons—a dancing caterer. What did I object to was: that I was temperamentally unsuited to serve under the then weak-kneed Government of India and the Lieutenant-Governor of Bombay, whose actions, in my opinion, were backboneless and vacillating, and also that, from a military point of view, there was nothing for me to do. So I refused the appointment.

I knew that my reasons for rejecting it would be considered outrageous, and they were. This did not perturb me, for they were honest, though, when I set them down, I fully realised that the normally dishonest ones would in all probability have seen me through. It was now for the War Office to notify me that they would not employ me again, and, as this was not done, I had no intention of resigning a second time, especially so as in 1926 it had been against my wish to withdraw my resignation, which I did to ease, not my position, but that of Sir George Milne.

I knew, however, that my soldiering days were at an end, and I did not regret this knowledge. I was in my fifty-third year, and so, according to my own theories my best days as a soldier were well behind me. I had written much against age, because both experience and history had confirmed my view that very few men of over fifty are fit for active military service. In 1932 I wrote a small book on this subject entitled *Generalship, its Diseases and their Cure*. Curiously enough, when it was still in proof, an anonymous article appeared in a Sunday paper expressing almost identical views. Privately I heard that at a Military Members' meeting at the War Office it was decided that I was the author of the vulgar attack it contained, which appeared a certainty when my pamphlet was published. Well, I was not, and this fact could easily have been ascertained by asking me; for I have never been afraid to acknowledge what I have written. Even my enemies ought to have known me better than that.

Then came the end. In December 1933 I was informed that, on the 14th of that month, I should be placed on the retired list, and the thanks conveyed to me for my "long and valuable services" would have rung truer had they been less conventional.

That I was never to be employed again did not surprise me, neither is it a question concerning which I have any complaint, nor has it left in me any rancour. It is the duty of the War Office to employ those they feel are of use

to the Army and to reject those who are useless. Having refused Bombay, what other appointment could they have offered me? Within the radius of their vision, the Army Council were right.

Yet I cannot leave this final scene in my life as a soldier without thanking those who regretted my going. Letters flooded in from all parts of the Empire, and also from several foreign countries. Two I will quote, though they are very similar and very flattering. The first is from an officer I had never met, a complete stranger, and the second from my old Under Officer at Sandhurst, brother student at the Staff College, a sound and loyal soldier who had known me throughout my entire service. These two letters read as follows:

“ I was sorry to see in the papers that you had retired from the service.

“ I hope, sir, that this will not mean that you will cease writing to make soldiers and civilians realise that future war—should it come—need not be the senseless massacre of 1914–18.

“ If you had not commenced writing after the war, there would have been no idea of mechanisation, and no alternative in man’s mind but the dismal one above. Might I say, however, that even if you never wrote another word, it would be a case of ‘*Si monumentum quaeris circumspice.*’ As a little example I find my young nephew and his friend, bound for Sandhurst, quoting your books. . . .”

“ I read that you have retired. I suppose ‘writing’ will now be your principal pursuit.

“ Whatever may happen, you have the satisfaction of knowing that your acts and writings from 1917 to 1930 have in twelve years done more to stir up the British Army than any other man has accomplished in a lifetime. You may not be satisfied with the progress made or methods adopted now; but it is all superimposed on what you initiated. You, better than Wren’s memorial sculptor,

can say: '*Si monumentum quaeris circumspice.*' . . . You and I both have claims on the memory of Sir John Moore."

Though such letters must of their very nature be flattering, it was good to think that, in spite of a few vicious enemies (and what would-be reformer is without such?), one could leave the Army with the thanks and good wishes of so staunch a band of friends. Surely such goodwill and generous understanding are worth more than anything I may have missed.

CHAPTER XVIII

SYNTHETIC-ICONOCLASM

LOOKING back over the thirty-five years of my service, I feel that it is a duty to myself, if not also to the reader, to appraise what I accomplished, not during the war, for whatever was then done was of a transient nature; but, instead, during those years in which I became a wandering student, one who, leaving the beaten track of military thought, sought new ideas in directions but little explored. These wanderings I have so far barely mentioned, yet in them is to be found anything which the future may judge to be of worth.

Now, if the reader will turn back to the two letters quoted at the end of the last chapter, he will see that in the first I am credited with the introduction of the idea of mechanisation, and in the second of stirring up our Army in a way seldom done before. The first is an over-statement, and the second—and I do not write this boastfully—is, in a way, an under-statement; for though my writings on war have barely agitated the placid surface of our military doctrines, amongst foreign nations they have caused certain strange undercurrents to arise. Further, in my more recent work I have not directly appealed to the soldier at all, but to civilians, and more particularly to those who are politically minded, because war, as Clausewitz wrote a hundred years ago, is nothing more than an acceleration of peace-time politics.

Taking the former statement first. As regards mechanisation, I have never claimed to be more than the fly on the chariot wheel; yet with this difference—I have been conscious that it was not I who was raising the dust. The chariot itself was civilisation, and the dust, which so

completely blinded the professional soldier, an assurance that it was in rapid movement; consequently, that all past military systems and theories were, willy-nilly, being left behind. Had I never lived, and even had there never been a World War, mechanisation would have appeared among us in its own good time. Realising this, many years ago now I stated, perhaps a little cryptically, that "The tools of peace are the weapons of war," which simply means that peace and war are the obverse and reverse of civilisation, and according to its peace aspect so will be its war aspect; for though forms may change the substance remains identical. From this conception of the unity of peace and war, the Venusian and Martian currents in human nature, I derived what I called "the law of military development," which may be defined as the adaptation of military organisation to civil environment. Thus, when the basic factor in civilisation was the hand-tool, the infantry arm predominated; now that it is the machine-tool, mechanised arms will dominate instead. If steam is the motive power, steam will control the organisation of armies; if petrol—then petrol; if electricity—then electricity; and so on. From this law is derived what I have called "the constant tactical factor"—its repercussion on the instinct of self-preservation. This factor may be explained as follows: Every improvement in weapon-power has aimed at lessening the danger on one side by increasing it on the other; consequently every improvement in weapons has eventually given rise to a counter-improvement, which has rendered the improvement obsolete; the evolutionary pendulum of weapon-power, slowly or rapidly, swinging from the offensive to the protective and back again in harmony with the speed of civil progress; each swing in a measurable degree eliminating danger.

As long ago as January 1919 I pointed out in *Weekly Tank Notes* that "Tools or weapons, if only the right ones can be discovered, form 99 per cent. of victory," and that

all other things are no more than the "1 per cent. which makes the whole possible. Indeed, 'Savage animalism is nothing, inventive spiritualism is all.' . . ." I pointed out that though Napoleon was an infinitely greater General than Lord Raglan, the Minié rifle of 1854 would have enabled Lord Raglan to have annihilated him in 1815, and that had Napoleon, in 1805, "placed down as a challenge to the mechanical intellect of France 25,000,000 francs to produce a weapon 100 per cent. more efficient than the 'Brown Bess,' it is almost a certainty that, in 1815, he would have got it; that he would have won Waterloo, and that the whole course of history would have been changed. . . ." Again, in my book *Tanks in the Great War*, I pointed out that: "Animal superiority over animal is based on muscle, human superiority over human is based on brain . . . and so long as war continues, the army with the best brains (which also means the best weapons) will accomplish victory with the least loss. . . ." Further, "the logical deduction is, that the ideal army to aim at is *one* man . . . who can press a button or pull a plug and so put into operation war machines evolved by the best brains of the nation during peace-time. . . ."

In the more immediate sphere of change I explained that the mechanisation of armies, by increasing their mobility and reducing size, would dissolve the old conceptions of linear and frontal operations, and replace them by a strategy of areas and a tactics of rear attacks. That it was but a step from attacking the brains of an army, as suggested in "Plan 1919," to attacking the nerves of a nation, as explained in my book *The Reformation of War* (1923). That aircraft together with tanks, which can protect their ground organisations, are the two superior weapons in this system of war, the object of which is to terrorise rather than to kill. This led me to the conception of the wirelessly controlled aeroplane—the flying robot, first suggested by me in 1919 and since then frequently referred to. As early as 1920, in *Tanks in*

the Great War, I predicted: "War will be eliminated by weapons, not by words or treaties or leagues of nations: by weapons—leagues of tanks, aeroplanes and submarines—which will render opposition hopeless or retribution so terrible that nations will think, not once or twice, but many times before going to war." And, in 1931, I repeated this by saying, in an article in *What would be the Character of a New War?*: ". . . Surely it is far more likely that warlike inventions, rather than peaceful sentiments, will one day be able to whisper into the ears of this troubled world—*Pax vobiscum*."

Ironical though it may seem, the imagination and thought which I expended on this subject, in place of benefiting my own country, have in many ways proved detrimental to it; for though my writings have roused popular thought on this subject, they have had but little effect on the conservative brains of our military leaders, and in consequence the people imagine that our Army is rapidly being mechanised, when in actual fact it is scarcely mechanised at all. Mentally it is profoundly pre-war, and to-day our Higher Command is actually devising tanks which will protect infantry rather than tanks which can defeat their like.

Though my writings have hitherto had little influence on our military leaders, abroad it has been otherwise. And though the development of mechanisation in foreign armies has been and still is restricted by cost, "tank-mindedness" has been developed out of all proportion when compared to our own. I will give a concrete example of this. In 1932 I published a book called *Lectures on F.S.R.III. (Operations between Mechanised Forces)*. In 1933 I learned that 30,000 copies of a Russian translation of it had been issued to the Bolshevik Army; yet up to date no more than 500 copies of the English edition have been sold, which is less than the sales of the Spanish edition of 1933 and the Czech edition of two years later. If this book is rubbish, then the Russians, Spaniards and Czechs

are fools; if not, then either our Higher Command are far in advance of my ideas, or else still far behind them.

What has been the stock argument against me? Exaggeration—as if anything outside a laboratory can be grasped without metaphor or pictorial effect. If, in 1919, I talked of electrical warfare, suggested “press-button” command, and, in 1920, wrote: “The next step is the submarine tank carrier, a kind of sea serpent which spews monsters on to the beach,” was I in actual fact exaggerating? In 1935 we have the robot aeroplane and could have had it in 1925. Also, is there anything impossible in a submarine carrying tanks, a vessel which will turn the “ditch” which separates us from the Continent into a “veritable tube railway for hostile armies”? No! for when I suggested this I said: “Let us look ahead; the world is getting small, but science is vastly huge. Every rational thought is a true thought which may lead to realisable effect. There is nothing too wonderful for science—we of the fighting services must grasp the wand of this magician and compel the future to obey us.”

What *is* an exaggeration is to proclaim that infantry are still the superior arm, and that cavalry charges with lances and sabres are still profitable. Where science is concerned, exaggerations lurk in the past and not in the future.

I pointed this out in the debate held at the Senior Officers' School on December 6, 1920. I concluded my part of that debate by saying: “I may be right or wrong in detail, but in principle I have not yet been refuted. You have got to mechanise¹ or go under. We in the Army to-day are faced by the same problem which faced industry a hundred years ago.

“A hundred years ago George Stephenson was the laughing-stock of Europe. Exactly a hundred years ago, before the Stockton–Darlington line was opened, he said to his pupils:

¹ The dreadful word used by soldiers before “mechanise” was adopted.

“ ‘ Now, lads, I venture to tell you that I think you will live to see the day when railways will supersede almost all other methods of conveyance in this country—when mail coaches will go by railway, and railroads will become great highways for the King and all his subjects. The time is coming when it will be cheaper for a working man to travel on a railroad than to walk on foot.’ ”

Was this an exaggeration? Yes, to a *Quarterly Review* writer, who wrote: “ What can be more palpably absurd and ridiculous than the prospect held out of locomotives travelling twice as fast as stage coaches! ” And also to a pamphleteer, who said: “ The railway will prevent cows grazing, hens laying, and will cause ladies to give premature birth to children at the sight of these things going forward at the rate of four and a half miles an hour! ”

To George Stephenson the answer is “ No. ” So I concluded by saying: “ Now, Gentlemen, I venture to tell you that I think you will live to see the day when cross-country tractors will supersede almost all other methods of military movement. The time is coming when it will be more economical for the soldier to travel on a cross-country machine than to walk on foot or ride on horseback. ”

Was this in any way a greater “ exaggeration ” than Mr. Balfour’s, when, on May 17, 1900, he said in the House of Commons: “ I sometimes dream, that in addition to railways and tramways we shall see great highways constructed for rapid motor traffic, and confined to motor traffic, which will have the immense advantage . . . of taking the workman from door to door, which no tramcar and no railway can do. ” I do not think so . . . and since then, flight, the radio and now the robot aeroplane. Yet the military mind remains unconvinced, and not even the most powerful imaginative calomel can open it. The fact is, that the soldier has an inborn horror of science. Mentally living in an intellectual age at least a generation

gone, science antagonises him directly he is confronted with it professionally.

I discovered this to my cost. In 1926 I published a book I have already mentioned, namely *The Foundations of the Science of War*, which, in 1934 an American officer informed me, "has for a long time been our Bible in this connection [the study of war]." Yet how was it received by soldiers in my own country? Not by criticism, but by personal abuse.

What was the aim of this book, however indifferently it may have been written? To teach soldiers how to think. It had nothing to do with future warfare; it was, so far as my limited abilities could make it, a scientific treatise on war—hence it was anathema.

This brings me to the second letter, which I quoted at the end of the last chapter—the stirring up of the Army: a psychological and not a mechanical problem; one emanating from myself, and not merely a reflection of the progress of civilisation on my mind. Here I must return to the first page or two of these Memoirs.

If a child is by nature truth-loving, and has sufficient power of will to remain so in face of the hypocrisies of life, that child will grow into a sceptic, and the form its scepticism will take is likely to be antagonistic to the local form these hypocrisies assume. The conditions which surrounded me as a child were those of a sleepy and most conventional little cathedral city, where charity towards others was non-existent, and in which, though on Sundays everyone proclaimed himself to be a miserable sinner, everyone continued as such during the remaining six days of the week. As a child this narrowness revolted me, and I hated church-going even more than castor oil.

When I began to grow up, my scepticism quite naturally took an anti-religious form, and the reading of two books, one called *Modern Christianity a Civilised Heathenism*, and the other Winwood Reade's well-known *The Martyrdom of Man*, definitely turned me into an agnostic. Further, it should

be remembered that this pronounced mental change coincided with the last lap of the great theologico-Darwinian controversy, and in consequence I soon became immersed in Huxley, Lecky, Samuel Laing and other rationalist writers. This, in turn, led to my first attempts in writing being heterodox.

Then in India, that is, during the years 1903-5, intellectually I passed from an iconoclastic mood into a potentially synthetic one. This, I think, was largely due to reading Berkeley's philosophy, the *Upanishads*, and above all Spencer's *First Principles*; for this noted book brought me into contact with his idea of the Unknowable. I then began to realise that, though conventional religion might be nauseating, crudely it stood for something which was neither rational nor irrational, but wonderful; a something which was beyond all things. Yet this intellectual change was of slow growth; because for several years it appeared to me that it was conventional religion which was blocking the way of true religion; consequently, I redoubled my attacks on the irrational and the hypocritical, not realising that it was scarcely rational to do so.

Next I began to realise that as the mass of mankind is irrational, to attack what the masses believe in, or believe they believe in, or proclaim they do because others do so, was in itself irrational, and that the only true course of reform lay in replacing an old worn-out spirituality by a new. This realisation developed about the time I began to study for the Staff College; that is, at a time when new conditions of thought were beginning to surround me. What was the result? Though these new conditions did not change the principles which subconsciously were controlling my intellectual life, they forced my natural scepticism into other channels, and from a critic of religion I became a criticiser of war.

When this change of direction of thought took place, though I could in no way have explained it, I can now clearly see the relationship between my mental life, which

preceded this change in conditions, and that which followed it. Further, that whilst the first began with destructive and gradually passed towards constructive criticism, the second began where the first ended. In fact, during the years in which I attacked conventional religion, sub-consciously I was forging a piece of mental machinery wherewith I could thresh the grist from the chaff of the conventional theories of war.

During this psychological development, it was, I feel, exceedingly fortunate that, between the time I joined the Army and the time this change took place, I had taken no interest whatever in things military; consequently, when, between the years 1910 and 1912, I turned from destructive to constructive criticism (from being an iconoclast to becoming a synthesist), my brain was not lumbered up with conventional military doctrines. In short, so far as the subject of war was concerned, I could start with a clean slate, and was in no way impeded by having to unlearn, which is far more difficult than learning. This was an incalculable advantage, and goes to show, so it seems to me, that true education consists in training the mind how to think, in place of cramming it with what to think.

Equipped with my self-made mental threshing-machine, what to think was soon enough thrust upon me when war broke out. Granted that, at the opening of it, this machine was exceedingly imperfect; yet, if the reader will turn back to the various suggestions made by me during it, I think he will find that, though in detail they may be frequently faulty, in principle they are generally sound. Should this be so, then the reason for it is, that the way I had sub-consciously taught myself to think allowed me to start from a sceptical basis, which eliminating all interests and prejudices enabled me to build upon it a solution to each separate problem as it arose—this building up being executed within the scaffolding of a few simple principles. For instance, the first paper I wrote, the one in which I

examined the nature of the Ostend-Noyon-Verdun salient, and pointed out that the war on the Western Front was likely to be won in that good offensive triangle of land, Arras-Rheims-Namur, in spite of its obviousness it was not seen by others until costly trial and error forced them to see it. Again, my last paper—"Plan 1919"—though grasped by a few quick-thinking soldiers, remained a sealed book to Sir Douglas Haig and his like to the very end.

This was not due to genius, but to system—the examination of each problem in a purely common-sense way. So far as the study of war was concerned, I attempted to elaborate this system in my book *The Foundations of the Science of War*, which, being the first of its kind, is full of imperfections. In place of building it on any accepted theories, or following any previous line of thought, I set these aside and asked myself the question: "What is the simplest form of war?" That is, what is the seed of this complex problem? I arrived at the answer that the simplest form was a duel between two unarmed men; that each had to operate within three spheres—the mental, moral and physical. That each sphere was built around three primary elements: thus, in the physical sphere, we find offensive power, protective power and power of movement; in the moral—fear, *moral* and courage, and in the mental—reason, imagination and will. From these elements, when set in operation among the conditions which surround them, I derived, by a process which is too long to describe here, nine principles of force, namely offensive action, security and mobility in the physical sphere; surprises, endurance and determination in the moral sphere; and concentration, distribution and direction in the mental.

Granted that these principles, as set in print, are nothing more than words, nevertheless, when translated to the brain, they become a set of keys upon which may be played, so to speak, any war tune, so long as the player possesses a little skill. If not, they are of no value at all.

Now, whatever the problem may be, there must be a right and a wrong way of solving it, and in between a number of indifferent ways. To discover the most economical solution, or as near an approach to it as possible, the conditions which surround the problem must be carefully examined, and by means of the principles be fitted to the primary elements, which in the physical sphere are represented by weapons (offensive and protective) and means of movement. For instance, certain weapons will better fit certain conditions than others, and to use the wrong weapon is simply to show lack in craftsmanship.

Obviously, in war the main difficulty is to gauge the true value of conditions, and more especially so because they normally are very unstable. This is the reason why mobility of thought and of action are so vitally important.

As my object here is to give no more than an inkling of my system, I will now show how in the simplest sphere of military action, namely tactics, it compares with the conventional method of study.

The object of all military training is to prepare the soldier for the next war, for it is the only possible war in which he can fight; yet throughout the history of war the professional soldier has put the tactical cart in front of the armament horse. In other words, he has looked upon a war, or a campaign, as a mine to dig lessons out of, in place of as a gauge with which to measure and to verify the tactical hypotheses which were elaborated before the war under examination was fought.

According to my system, I examined the problem from a totally different angle, namely: given any weapon, however novel, and the circumstances in which it is likely to be used, and the characteristics of the soldiers who will use it, it should always be possible to work out for it a sound tactics, irrespective of the fact that as yet it has never been fought with. It is equally essential that we get another point into our heads: in modern times, certainly since 1850,

except in the foolish handling of men and weapons, no one war has in detail resembled another war; consequently, the lessons we extract from the last war are likely to prove dangerous guides in the next. Generally they are no more than verifications and denials of an old tactics, and, unless weapons remain identical in nature, they cannot form firm foundations whereon to build a new tactics.

In the moral sphere of war many general lessons can be learned from each war fought or studied; but in the tactical (physical) they can be learned only for specific weapons, and remain true so long as these weapons and all other weapons influencing them remain unchanged. Yet to discover the tactical value of a weapon, all the soldier need do is to examine its powers and limitations, and on these build up a tactics.

This solution is so obvious and simple that the persistent failure to adopt it would be inexplicable, were it forgotten that the average soldier is so unimaginative that the simplest abstract reasoning is impossible to him. The result is what I have called in my book *The Army in my Time*—the Haig-mind; that is, a mind which can receive impressions, but which cannot formulate judgments. It can swallow the past and vomit it forth undigested; but it cannot foresee, let alone create the future.

These few words, I trust, will explain why I was an unconventional soldier during the war, and why after it, because conditions changed from the tactical to the political, quite naturally I began to thresh the grist from the chaff of more complex problems.

Once I began to examine it, what did the aftermath of the war reveal to me? A return to mediæval witchcraft. The masses anathematised war because of its destructiveness, which had upset their conveniences and comfort. And be it remembered the masses are instinctively conservative; for though they will frequently applaud revolutionary doctrines, they detest revolutionary activities. Directly a promise verges towards an accomplishment,

the uncertainty of the change-over petrifies them. In 1919 they were in actual fact terrified by the dynamism of the war, because of their constitutional inertia. Though physical destruction was obvious—loss of life, waste of money, destruction of property, etc., etc.—they could not see what the war really destroyed was the moral order which had existed before this conflict. That war was not, as they proclaimed, an act of unreason, but of suppressed subconscious reasoning. As it had emerged out of a state of peacefulness, its causes must be sought in that state, and unless they were discovered and eliminated, the peace of 1919 could be nothing more than a pause in hostilities.

The masses and the politicians (those who rise or sink on their emotional froth) could not see that a nation or a society, like an army, is built up of individual men, and that consequently the simplest way of examining the whole of this immensely complex problem is to return to the individual and examine him. For instance, should a man be thrown into a fever or be attacked by a fit of vomiting, there must be a reason for this. To anathematise, outlaw or attempt to talk away the fever or sickness is nothing less than witchcraft; because these are but the effects of causes which poisoned or disagreed with the healthy workings of the body.

As an individual is poisoned physically, so is a society poisoned morally; consequently, in this case the cause must be a moral one. Therefore the solution is not physical force, economic or military, which at most can only tamp the disease down and so standardise the sickness, but an elimination of those poisonous immoral forces which caused the last one.

Before the war this poison had steadily been accumulated during the industrial revolution and its aftermath. Its name was "Greed," which begot fear, and fear led to war, openly to maintain greed, but occultly also to prevent the body social being destroyed by it. The war of 1914-18 was not, as the majority believe, a disaster, but a de-

liverance, not consciously engineered; but subconsciously created.

In 1919 this was not seen, and even to-day, nearly twenty years after the event, few see it. Had the belligerents been rational, they would have said: "We have all made fools of ourselves; let us shake hands and mend what we have shattered." But they could not say that, because they were not sane enough even to examine its causes. Instead, concentrating upon its effects, they went mad, and continued the war in subtler and more destructive forms.

It may seem presumptuous for me to say that, directly the Peace Conference of 1919 got to work, I predicted its failure, and I did the same with the Disarmament Conference of 1932. Others no doubt also foresaw these failures; yet the number who did so was small. Why did I join this minority? The answer is, that my philosophy, such as it is, is founded upon scepticism, and that this scepticism had led me to realise that mass opinions are generally wrong, because mentally the masses are seldom less than a generation out of date. When, in 1918, they shouted, "Hang the Kaiser!" they were at least a thousand years out of date, and when, in 1919, they insisted upon the ruin of Germany they cast back to the mentality of the Thirty Years War. There is, consequently, no magic in my system: if the masses yell "black!" I start with white and then examine it and ascertain whether it may not be grey or some other colour. Lastly, I construct upon this foundation what is morally right and not what is economically profitable; for unless economics have a moral foundation, and the moral an intellectual foundation, there can be no holism—no corporate and human solution.

Thus it happened that, because of the conditions, not created by the war, but by the peace treaties following it, I turned to what I called the "The Natural History of War": the inter-relationships between war and culture

and war and civilisation. I first broached this subject in *The Journal of the Royal Artillery* of April 1929, and later on elaborated it in my book *The Dragon's Teeth*. That I penetrated deeply into this tremendous problem—no; for all I showed was that it existed, and that until it was studied and understood, it was pure nonsense to talk of outlawing or abolishing war. Later on, in a book called *War and Western Civilisation*, I proved beyond any shadow of doubt that, though a limited democracy may be an instrument of peace, an unlimited one is a certain instrument of war, because its power is emotional and war is a violent expression of emotionalism. Further, when mass democracy (mobocracy) is infused with plutocratic ideals, then the energy released will swing from the constructive to the destructive in proportion as emotionalism is controlled or released. Given an emotional basis as the fulcrum of government, then it logically follows that the bullet is predestined by the ballot, and that every man his vote must lead to every man his rifle. Conscription is, in fact, nothing more than the military expression of democracy in its most violent form.

From this study of the natural history of war, I came to the conclusions that, throughout the history of man, there have been two primary causes of war—the economic and the biological. To clarify this I will once again return to the individual—the source of all human problems.

In nine cases out of ten, or more probably in nineteen out of twenty, what does primitive man fight for? For food and women, that is, for self-preservation and for race-preservation, the first being pronouncedly an economic question and the second a moral one. In the mobocrat or the plutocrat of to-day it is the same, though in place of food stands money and in place of women—expansion. If a man is starving, he will steal, and if a nation is attacked economically, eventually it will fight. Again, instinctively, a man requires a woman, and instinctively a nation which

is over-populated requires more room, colonies, protectorates, etc., so that it may possess its children.

When we turn to the existing phase of this natural history, we discover that, because of science and invention, as warlike instruments grow more powerful, the causes of economic disequilibrium potentially become less powerful. The reason for this is, that science is daily rendering it easier for mankind to produce artificially, and so supplement the niggardly creative processes of nature. Because the Age of Plenty is ready to replace the Age of Scarcity, it is possible for man to eliminate the economic cause of war; but, so long as he continues to resist this change, his inventive energies, which should be expended upon developing it, will be devoted to warlike preparations. Consequently, every increase in weapon-power is a portent that the Age of Scarcity is approaching its collapse.

The biological cause of war is more difficult to deal with, because it is less artificial, that is, less influenced by reason or the inventive genius of man. Yet it seems probable that, as the Age of Plenty will raise the standard of living, a decline in the birth-rate will set in and automatically eliminate the need for expansion. Even if this assumption is correct, the restriction and final disappearance of this cause is likely to take many years; consequently, the abolition of fighting forces is not as yet a practical suggestion. In fact, it is instinctively a nonsensical suggestion, for it carries with it race extinction. This is undoubted, seeing that Asia is at present under-populated and Europe almost fully populated. A hundred years hence the process which, in our own country, led during the nineteenth century to the trebling of its population may lead to a trebling of Asiatics between now and 2035. Consequently, long before that date a recurrence may take place of the barbaric invasions which once engulfed the Roman Empire. It was not that Rome was too big, but too small, and to-day the problem of European preservation is much the same, though for smallness we must substitute disunity.

Thus rightly or wrongly I arrived at this conclusion: that the conflict of 1914-18 was a war of deliverance in that it shook to its foundations the structure of the civilisation which had brought it forth; consequently, morally there could be no return to the political system of 1914 or any continuance of the *status quo* established in 1919 by the adherents of that system. Faced by a resurgent Asia, European unification was imperative; yet it was possible only by moving forwards in the direction of a new morality upon which could be erected a new political system. What Europe wanted was an ideal—spiritualisation, and not a return to the materialism of before-war days.

Yet the victorious Powers could not see this, and, backed by the whole force of their respective democracies, their statesmen stepped hellwards and not heavenwards. Instead of examining the diseases of civilisation, in the blindness of their greed and in the heat of their vengeance they attempted to solidify them. They could not see that in actual fact the problem of European peace was far more a spiritual than a political one, and a moral than an economic one. That as the new economy of power-production was replacing that of hand-production, a new national discipline was required as well as a new governmental system to control and enforce it.

Lastly, they could not understand the tendency of events. In the eighteenth century nations had been agriculturally self-contained; then, during the nineteenth, becoming less and less so, a bastard internationalism was created, which is now being rapidly undermined by scientific inventions. Once again nations are becoming more and more self-supporting; consequently, to attempt to reconsolidate Europe on a declining internationalism is suicidal. Yet this is what was done at Versailles in 1919. A league of victorious nations was formed, and a covenant was drawn up, in accordance with which the maintenance of the *status quo* became the supreme object. To guarantee victory the defeated Powers were not only disarmed, but

economically ruined, whilst their conquerors increased their armaments.

Cloaked in a gaudy hypocrisy, the League of Nations is essentially anti-spiritual, because its ideals run counter to the spirit of the age as markedly as in its day did those of its ancestor—the Holy Alliance. In conception it is closely related to Bolshevism; both are materialist, and they accentuate the old diseases in place of eliminating them. Now that the U.S.S.R. has joined the League and is in actual or potential alliance with France, its most fervent member, these two forms of internationalism will stand shoulder to shoulder to protect a dying epoch.

Not for a moment do I suggest that these views are necessarily right; yet I cannot help feeling that my system is not altogether wrong. By doubting the present I have been forced to look towards the future, and then, in order to discover what the future has in store, I have been compelled to turn to the past. Briefly, it appears to me that what is happening to-day is in form similar to what happened a little over a hundred years ago. Then the fight was one between a dying absolutism and an emerging democracy; now it is one between an outworn democracy and emergent fascism.¹ In its youth democracy was just as virile a force as fascism is to-day. By making liberty one of its three goals it freed the minds of men from religious dogmas, and by making equality another it proffered this liberty to all. The result outwardly was a rapid political revolution born in the turmoil of the French Revolution, and inwardly a much slower scientific revolution, the masses being interested in the first and a few

¹ I recognise that this word is a misleading one; yet it is difficult to find one which will replace it. I use it in the broad sense of the new political philosophy to-day challenging mass-democracy. By it I mean a combination of scientific individualism and aristocracy. I consider that, in this machine age, the establishment of the Corporative State is inevitable; but that planning must evolve from the bottom and not be imposed by the top. Also I believe that Government must become more autocratic and aristocratic, and to me aristocracy is synonymous with leadership. Here I diverge from the Italian form; for finally I believe that the Corporate State and Autocratic Government are but means (the mechanics) to an end, namely, a new way of life, the spirit of which is freedom.

heterogeneous students in the second. Unfortunately for the scientific revolution, the political reached maturity whilst it itself was still in the cradle, and though the governmental instrument which the political revolution created was moderately well suited to a slow-moving agricultural civilisation, it was in no way suited to control the dynamic industrial civilisation, which from the middle of the nineteenth century onwards science rapidly evolved. The result was that the reality which democracy was endowed with between the years 1792 and 1848, growing yearly more and more out of touch with industrial civilisation, was sterilised into a myth and lost its moral impulse. By the end of the last century this myth, though in nominal political control, was completely out of touch with the spirit of science, which demanded for its full expression a new political reality.

At the opening of the present century this new reality was still without form. It was in no sense an instrument, but only a vague idea dimly sensed by a few, and utterly hidden from the masses of mankind. It was as yet in the womb of thought awaiting some great social or political cataclysm to give it birth. Being the possession of the few—and scientific thought can never be the property of the many—it was of necessity self-centred and, consequently, autocratic. Its birth was a painful one, for the catastrophe which liberated it was the World War.

Then, during the four years of that conflict, science, unrestricted by cost and stimulated by demand, in seven-league boots swept forward half a century, and in this almost magical advance the trumpet blast of the men of mind heralded in the age of power-production. What does this new economic dispensation mean? That, as I have stated, the Age of Scarcity will give way to the Age of Plenty, and nations becoming more and more self-contained, in place of internationalism a new culture will gradually take form, which, being freed from economic friction, will aspire towards a higher civilisation. Thus

it comes about that, building on my scepticism, I believe the new end humanity will, little by little, decide upon is the creation of a happier world and that science is our guiding star. If this is so, then I also believe that we must hitch to it, not only the wagon of our work, but also the wagons of our systems of politics and finance, which must become more and more scientific; that is, more and more suited to the age in which we live. Lastly, into this purified dust we must breathe a new spirit of beauty and manliness—a harmony of the Venusian and Martian currents within us.

From this brief survey of the present turmoil and its undercurrents, I will now outline the creed which my synthetic-iconoclastic philosophy has led me to adopt.

I believe that, in spite of the crudeness of the changes which are now taking place, the end of fascism is the creation of a higher freedom. I do not believe that a panic-ridden Government is free, nor a loan-shackled world, nor a press-shackled populace. Instead, I believe that I must begin with myself, discipline myself, organise my life and act creatively. Then, as a free agent, I can pass on to my daily work which I share with other men, and through the nation to which I belong to the world which embraces us all. In each of these spheres of living will I seek truth, act impartially and assist in establishing order.

From this it will be gauged that, anyhow for me, fascism is a national creed as well as a universal philosophy. The fascist state sets its own house in order before meddling with the houses of other nations, let alone the entire world. Its first peace problem is contentedness at home, which means the elimination of the class struggle, of revolutions and of civil wars. Though a revolutionary philosophy, fascism is politically a counter-revolutionary instrument. If each nation will set its own house in order, and, during the next few years, will mind its own business, then will each nation be in a position to turn to its neighbours and say: Let us change our old worn-out method of distribu-

tion, our system of international finance, with which we used to cheat each other, fight each other, enslave each other and pauperise each other; let us have a truthful, impartial and orderly system of exchange. Should this be agreed to, then, in my firm opinion, the most virulent existing cause of war will be eliminated.

My articles of faith, therefore, are:

(1) The object of war is a more perfect peace; because war is a surgical instrument.

(2) The object of peace is a more perfect man; because peace is a scientific instrument.

(3) The object of man is a more perfect world; because man is a divine instrument.

As freedom, not licence or *laissez-faire*, is the object of the fascist philosophy, and as freedom is the essential in all creativeness, it follows that, in order to eliminate the causes of war, peace must be freed from the diseases which corrupt it. Once again we must turn the popular solution round and look at it from diametrically the opposite direction; for it is not war which should agitate the world to-day, but peace, because the next war will grow out of the present peace and not out of the last war. To condemn and anathematise the next war because of the last war is absurd, for there is no direct connection between them.

It was for this reason that logically I turned from the League of Nations, not that the idea of world integration is wrong, but because the instruments which were to create it were the old ones of force and sanctions. Equally was it for this reason that I turned towards the British Empire; for, in spite of its many defects, not only is it the greatest integration of free nations the world has ever seen, but as it stands outside the Continent of Europe it is ideally placed to act impartially towards European peoples.

I first considered this question in 1922, when I wrote a pamphlet entitled *The Machinery of Imperial Defence*, which twelve years later, in 1934, I elaborated into a book,

Empire Unity and Defence, in which a new Empire organisation was elaborated. Whatever may be thought of this book and of another, *India in Revolt*, which may be looked upon as an appendix to it, the fact remains that the Empire's present political systems can offer no solution to the problem of integration.

It is true that the principles of democratic government enabled the Dominions to obtain political freedom, but they in no way enabled them to establish prosperity and security. Consequently, this freedom was not a creative one. In place of being the goal of a system, it represented no more than the severance from a system. Even to-day, when the Dominions are autonomous nations, they are only so politically, for strategically not one of them is independent, and economically not one of them is actually as prosperous as many of the second-rate Powers. Their defence is still the burden of Great Britain, and their economic power, which potentially is enormous, is actually at the mercy of every British Government.

The problem, as I see it, is a simple one to define: it is to establish imperial machinery which will bind the Empire together without infringing the freedom of its separate parts, by which I mean, that whilst the cultural life of each part is not the concern of any other part, the economic resources of the Empire must be bound together, and the security of the whole guaranteed by the Empire as an entity. The power to defend must be authoritative; the power to produce—co-operative; and the way to live—individual. The problem is a threefold one, and until this is grasped nothing can restrict dissolution.

In *Empire Unity and Defence* I suggested that the solution to this problem lay in the creation of an Imperial Council, not an autocratic instrument, but an advisory one, which would control four great Departments of Empire, namely:

A Department of Imperial Culture to study imperial psychology, health, local opinion, education, history, literature and art.

A Department of Imperial Economics to study imperial resources, finance, tariffs, science, industry, agriculture, commerce and emigration.

A Department of Imperial Politics to study law and order, national and imperial administration, international relationships and foreign policy.

A Department of Imperial Defence to study the grand strategy of the Empire.

Concerning the working of this Council and its departments, I wrote:

“ Normally each subject of importance should be dealt with as follows: First, it should be submitted to the Cultural Department, which will attune the question to imperial psychology; next, it should be passed to the Economic Department, which will cost its values in terms of resources; then it should be examined and dealt with by the Political Department, which will shape it to fit policy; lastly, it should be forwarded to the Department of Imperial Defence, which, within the limits set by the three former Departments, will stabilise the problem by rendering it secure.

“ This, I maintain, is a rational and common-sense procedure. The question is first considered as a *human* question, secondly as an *economic* question, thirdly as a *political* and fourthly as a *military* question, from the standpoint of the whole Empire, and not solely from that of Great Britain or any one of the Dominions. . . .”

My aim, as it will be seen, was that every question should be synthetically dealt with. It would not simply be examined, discussed, picked to pieces and stuck together again; but built up from a human basis, the realm of cultural freedom, and crowned by the authority of military power. That is to say, whatever was decided upon politically would be secured and defended by the united might of the Empire.

Such is the dust of my system—deductions, calculations, suggestions and ideas, which are sterile and must remain so,

so long as the breath of life is not breathed into them; that creative spirit which alone can cause them to sprout and to grow. Here we are faced by the problem of leadership, which is *the* problem of the present age.

Nearly a hundred years ago now Thomas Carlyle said: "For, as I take it, Universal History, the history of what man has accomplished in this world, is at bottom the History of the Great Men who have worked here . . . all things that we see standing accomplished in the world are properly the outer material result, the practical realisation and embodiment, of Thoughts that dwelt in the Great Men sent into the world: the soul of the whole world's history, it may justly be considered, were the history of these."

I for one do not doubt that Carlyle is right; for here my reading of history leaves no room for scepticism; consequently, my belief is that, when circumstances allow little men to abound and to control, "the soul of world history" grows small, mean and sterile. Then "Universal History" ceases, it slumbers, and the chatterings of apes echo through the shadowland of the brave.

Is not this what has happened since Carlyle thundered on heroes and on heroism? From 1870 onwards the Western World slips into a decline. The great men of action are no more. Napoleon and the Napoleonic have gone, their shadows passing away at Sedan. Palmerston has gone, Lincoln has been assassinated, Cavour is dead, and Bismarck has accomplished his great work. The heroes of action are rapidly replaced by the anchorites of thought; the battlefield giving way to the laboratory, out of which creative spells emerge, only to be sucked into destructive vortices. Words drown actions, and leadership sinks into debate.

Thus is re-enacted the tragedy of Babel, and as the Western World creeps shamefacedly into the present century, the little men emerge leaning on the shadows of the great ones now gone: Germany the ectoplasm of Bismarck;

France a land that cannot beget even a Boulanger; and England a Balfourian effervescence.

In the armies of the West it is the same: Helmuth von Moltke leans upon the wraith of his great uncle; Père Joffre upon a political scandal; and Johnny French upon the Cavalry Club. It is morally an empty world full of amiable and agreeable mediocrities. In it there is no leadership, no command, no audacity, no heroism; like sand, events slip through the fingers of garrulous statesmen until blood pours from the fists of impotent soldiers.

Debates, half-measures, delegation of responsibilities, slaughter; these are the four elements of 1914-18. After the massacre it is the same, but viler: there is no control, no command, no leadership; only the belchings of words, yells and vociferations. Mobocracy reaches its zenith and then in one country after another collapses, blown to pieces by its vileness: its littleness can no longer even support its inanities.

To little men the age of great men cannot recur. Only combines, committees, assemblies, in two words, talking shops, can take their place. Shops in which words are sold and bartered and where verbal swindlings become the measure of man's worth.

Fifteen years ago this seemed irrevocable, yet it was a lie; for though the political, social and economic knots were so entangled that they were unravellable, memory played us false. Alexander and the sword of the Phrygian King had been forgotten, and when the knot is cut the Phrygian cap is worn. Men appeared who dared to do and to act; crude, daring, individual personalities: look at the galaxy of the dictators—Lenin, Stalin, Pilsudski, Kemal Ataturk, Mussolini, Hitler. Not men of the study, but of the forge; blacksmiths of a return to manliness. Shackle breakers and shackle makers—men of action. Men who showed that “This world, after all our science and sciences, is still a miracle; wonderful, inscrutable, *magical* and more. . . .” That “The Highest Being

reveals himself in Man ” and not in the systems of men. That “ No nobler feeling than this of admiration for one higher than himself dwells in the breast of man. It is to this hour, and at all hours, the vivifying influence in man’s life. Religion I find stands upon it; not Paganism only, but far higher and truer religions—all religion hitherto known.”

Thus, to-day, we watch the world striving towards greatness, and when we watch the return of the great men, how true are the words of Carlyle: “ What he says, all men were not far from saying, were longing to say. The Thoughts of all start up, as from painful enchanted sleep, round his Thought; answering to it, Yes, even so! ” Because:

“ The first duty for a man is still that of subduing *Fear*. We must get rid of Fear; we cannot act at all till then. . . . Odin’s creed, if we disentangle the real kernel of it, is true to this hour. A man shall and must be valiant; he must march forward, and quit himself like a man—trusting imperturbably in the appointment and *choice* of the upper Powers; and, on the whole, not fear at all. . . . ”

This I have always felt; as a youth and now as a man well in middle age: That truth is courage intellectualised. Thus the idea of the great man is the human coping-stone of my philosophy as it was of the philosophy of that great man—Thomas Carlyle. Therefore in my study of war I have always put the great man first. As my system was founded on the organisation of the human body, of necessity it follows that to breathe life into it, those who can do so must be men who at least aspire towards greatness.

I have written my share on this subject, and in my books *Sir John Moore’s System of Training*; *Grant and Lee, a Study of Personality and Generalship* and in *Generalship, its Diseases and their Cure*, this question has been examined, and in examining it I sinned against the ark of our military

covenant. To attack a system is heresy, but to attack those who are controlled by it and those who control it is damnation.

How many dare to? Very few; consequently, if there is anything remarkable in my life and work, it is that I have dared to attack authority. Not the system only, but those who work its levers, consciously or unconsciously to their own profit, and who, reclining in the shadow of our past greatness, have littleness writ in their hearts.

Therefore my final appeal has been: That as this country, this nation and this Empire were built by great men and not by agreeable and amiable nonentities, no system, no plan, no reform, no organisation can rejuvenate us unless great men lead us once again. Around us and about us greatness is emerging crude and disruptive; yet volcanic and virile. The age of mediocrity is drawing to its close; the little men are daily dwindling in size as the great men shake the earth. Soon will the Lilliputians creep into the grave of a well-earned oblivion, and unless our little men creep with them, we shall never read what is engraved upon its stone. Others, however, will read these words: "Fear is Failure and the Fore-runner of Failure: Be thou therefore without Fear; for in the heart of the Coward Virtue abideth not."

FINIS

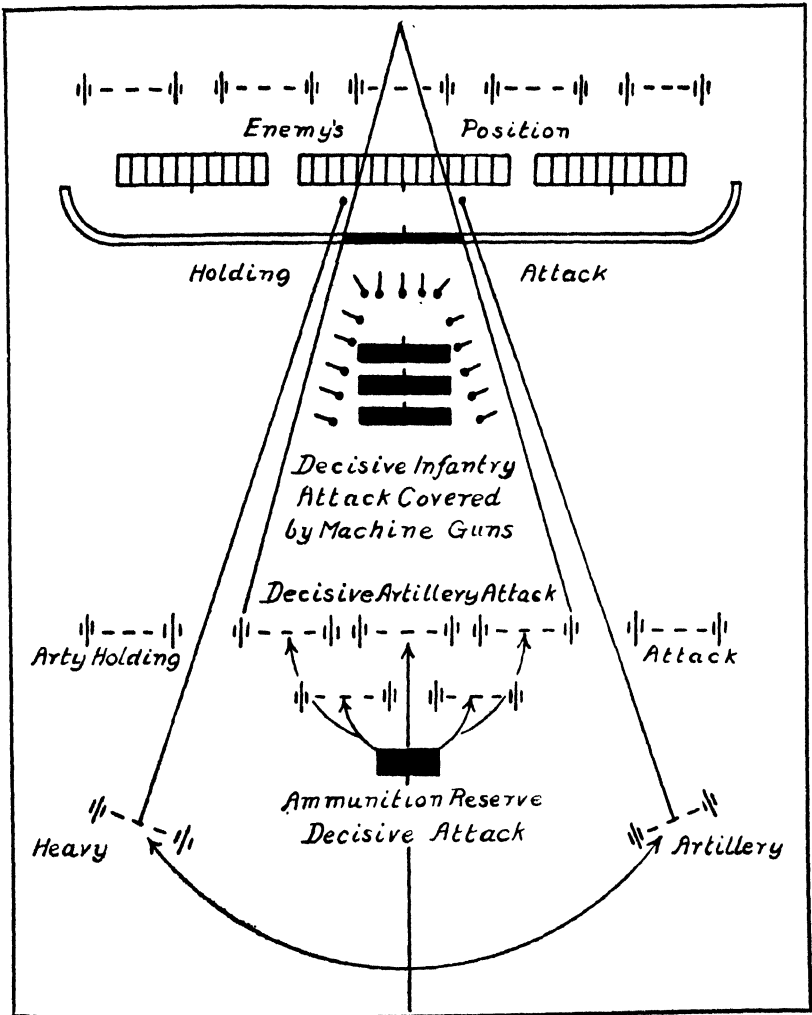


DIAGRAM I
Attack by Penetration I

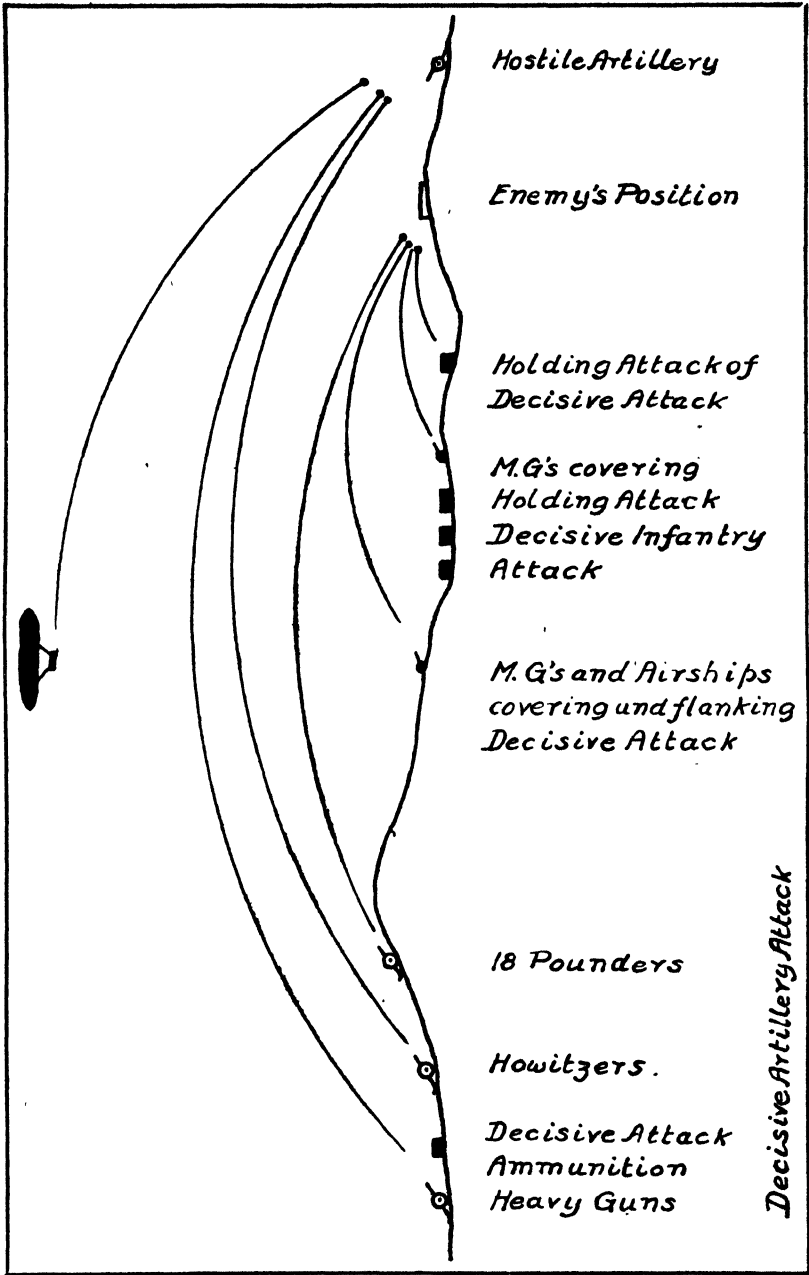


DIAGRAM 2
Attack by Penetration II

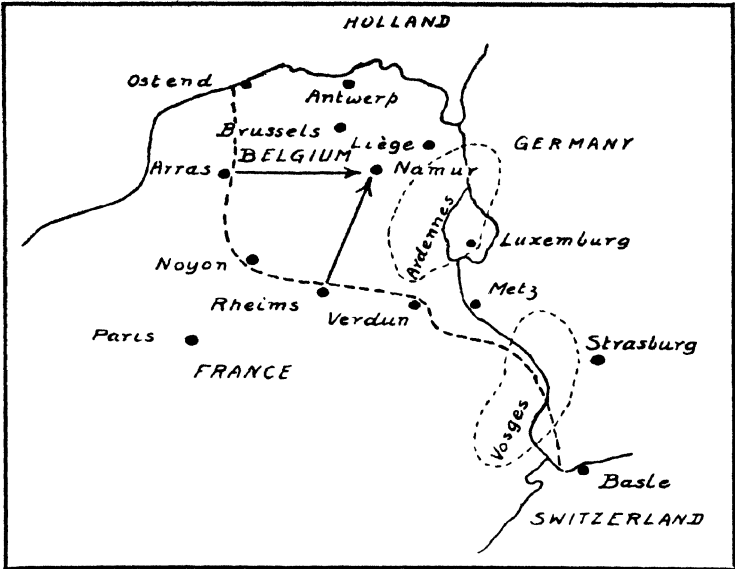


DIAGRAM 3
Strategic Plan of Western Front

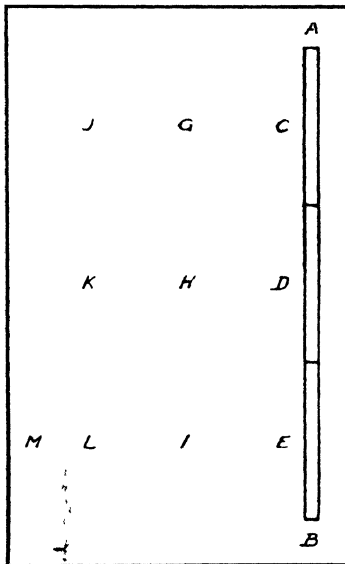


DIAGRAM 4
Organisation of a Defensive Front

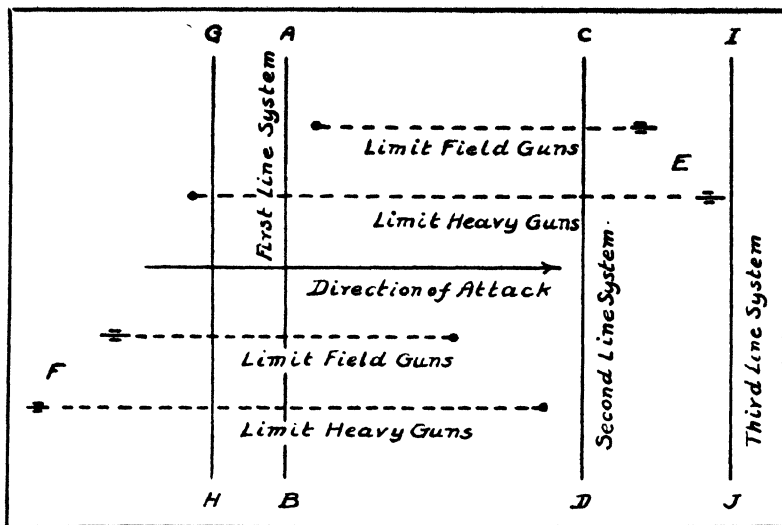


DIAGRAM 8
German Artillery Tactics

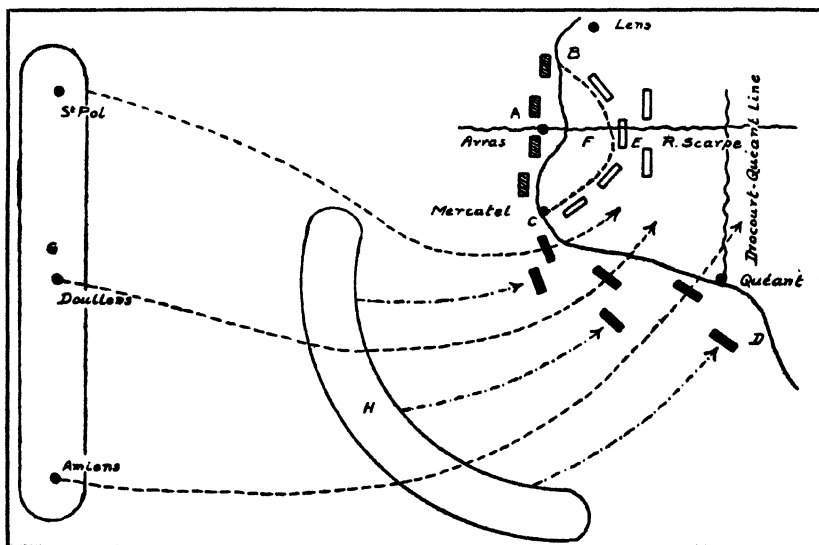


DIAGRAM 9
Tank Decisive Attack

A. Our wearing and holding attack. BC. Front of wearing and holding attack. CD. Front of decisive attack. E. Enemy's reserves. F. Sallient formed by attack A. G. Mechanised and motorised force. H. Infantry and Field Artillery Area.

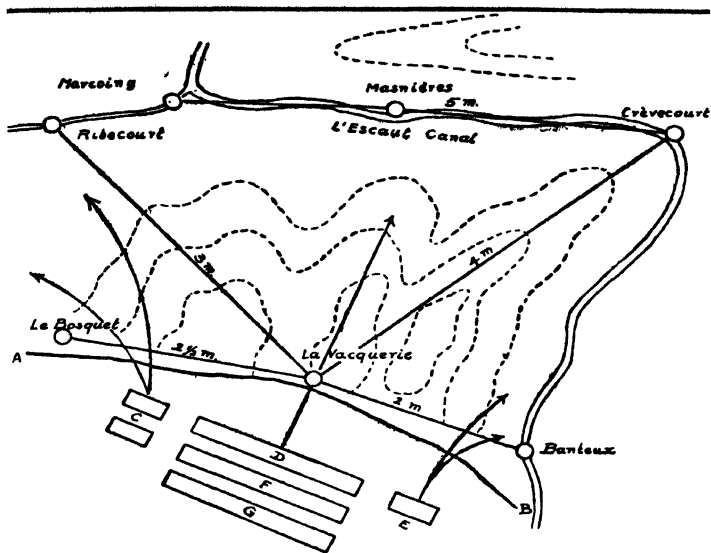


DIAGRAM 10

Cambrai Project, August 4, 1917

AB. British Front. C. Defensive Left Flank. E. Defensive Right Flank.
 D. To destroy and capture enemy guns. F. To destroy and capture enemy personnel. G. To mop up strong points.

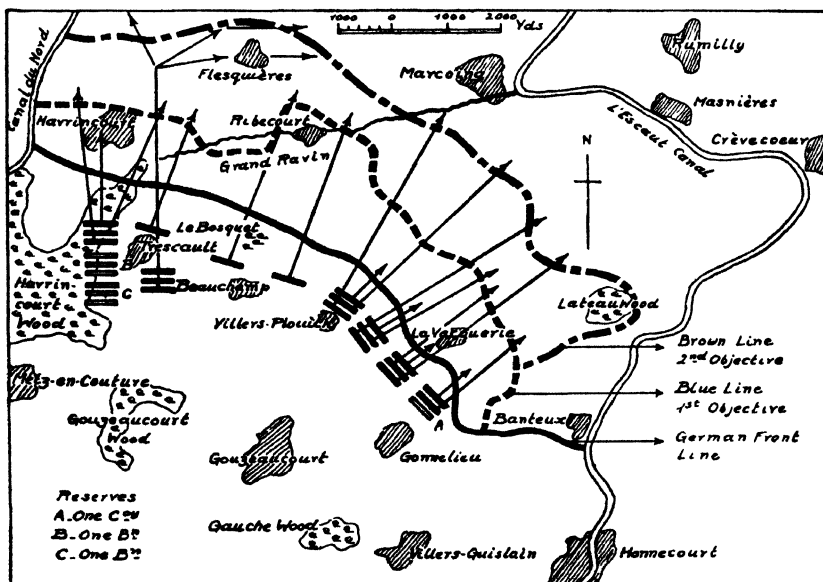


DIAGRAM 11

Cambrai Project, October 29, 1917

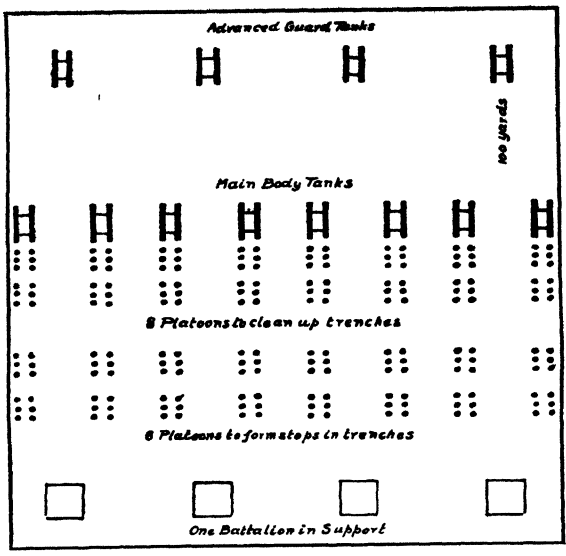


DIAGRAM 12
Cambrai Tactics—Assembly Formation

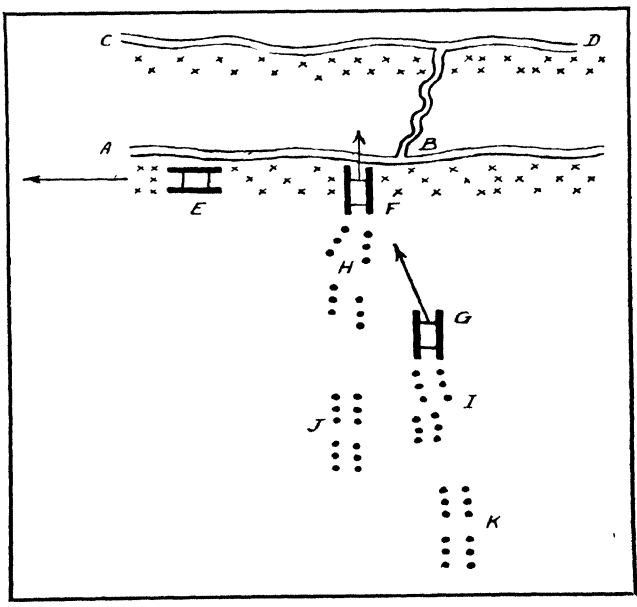


DIAGRAM 13
Cambrai Tactics—Approach Formation

AB. Fire Trench. E. Advance Tank. H and I. Trench Cleaners.
CD. Support Trench. F and G. Main Body Tanks. J and K. Trench Stops.

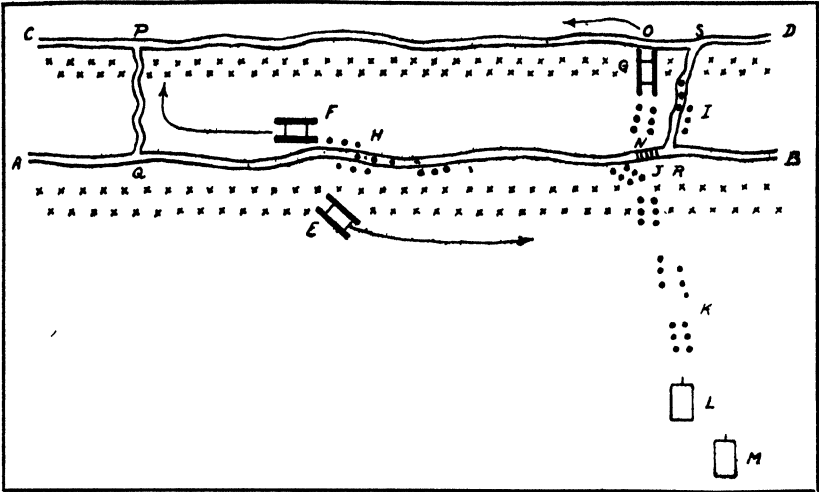


DIAGRAM 14
Cambrai Tactics—Attack Formation

- AB. Fire Trench.
- CD. Support Trench.
- E. Advance Guard Tank, having finished its work, is returning to cross over F tank's fascine at N and later G tank's fascine at O.
- F. First Main Body Tank advancing along Fire Trench will cross Support Trench at O.
- G. Second Main Body Tank will cast its fascine at O, cross Support Trench and work down to meet F at P.
- H. Trench Cleaners following F, bombers in Fire Trench.
- I. Trench Cleaners following G, bombers in Communication Trench.
- J. Trench Stops following F, will block trenches at Q and P.
- K. Trench Stops following G, will block trenches at R and S.
- LM. Supports.
- N. Fascine dropped by F tank.
- O. Place where G tank will drop fascine.
- PQRS. Places where trenches will be blocked by J and K.

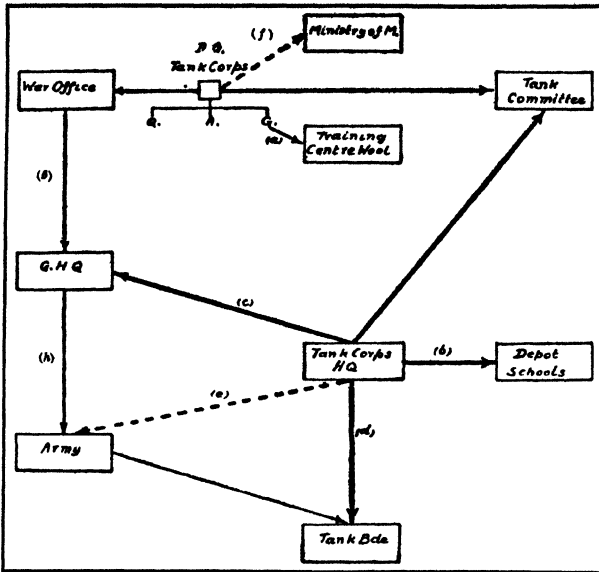


DIAGRAM 15

Tank Corps G.S. Organisation

- (a) and (b) Command complete. (c) Command suggestive.
 (d) Command optional. (e) Command through pressure.

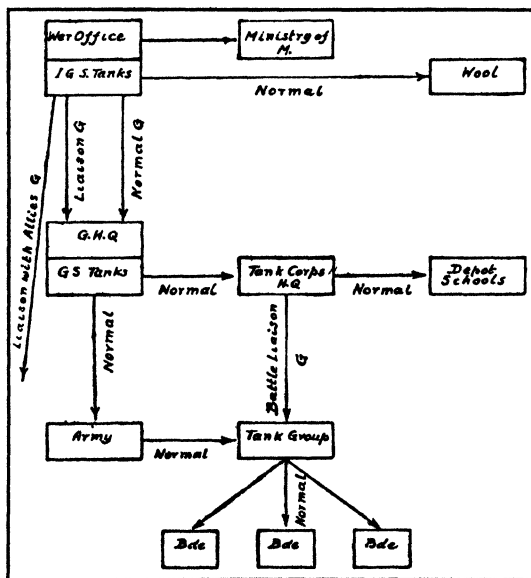


DIAGRAM 16

Tank Corps G.S. Reorganisation

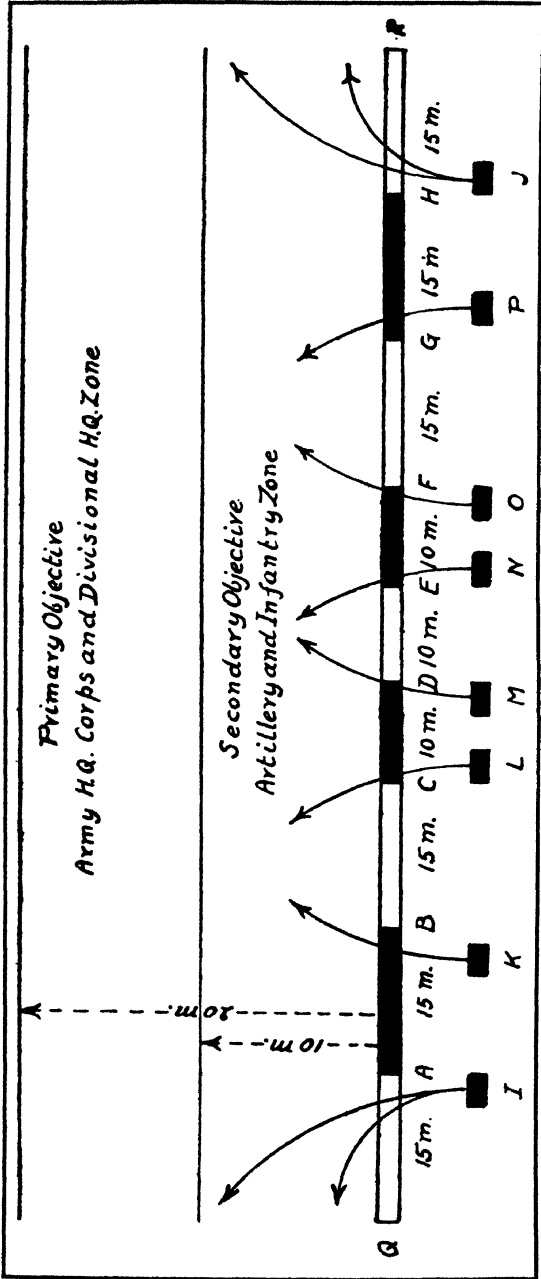


DIAGRAM 17.

The Morcellated Attack.

Total Frontage A-H = 90 miles.
 Frontage attacked A-B + C-D + E-F + G-H = 50 miles.
 Frontages enveloped B-C + D-E + F-G = 40 miles.
 I and J. Offensive Tank Flanks.
 K, L, M, N, O and P. Tank Enveloping Forces.

INDEX

- Aisne, Third battle of the, 269
 Alden, Maj., 222
 Alderson, Gen. E. A. H., 38
 Alexander the Great, 322, 476
 Allen, Maj. C. W. G., 296
 Allenby, Gen. Sir E. (Field-Marshal
 Visct.), 52, 77, 82, 100
 de Alvea, M., 357-8
 Amiens, Battle of, 297 *et seq.*
 Ancre, Battle of, 136
 Anley, Brig.-Gen. F. G., 93, 112
Army in My Time, 463
Army Review, 22
 Arnold, Lt. C. B., 309
 Arras, First battle of, 102 *et seq.*
 Arras, Second battle of, 316
Arya Samaj, 17
 Atkin-Berry, Capt. H. C., 88
- Baker-Carr, Lt.-Col. C., 94, 105, 201,
 247
 Balfour, Col. A. G., 32
 Balfour, Ld., 239, 457, 476
 Beaumont Hamel, Attack on, 92
 Bell, Gen. A. L. Lynden- 56-7, 286,
 295-6, 345, 354, 359, 363, 365, 392,
 401, 412-3
 von Below, Gen., 247
 Bengough, Maj., 414
 Beresford, Ld. Charles, 139
 Berkeley, George (Bp. of Cloyne), 459
 Bermicourt, 87 *et seq.*
 Bethune, —, 10-11, 13
 Bingham, Maj. D., 213
 Bird, Maj.-Gen. W. D., 368, 395
 Bismarck, 475
 Blavatsky, H. P., 365
 Blücher, Marshal, 140
 Boer War, 8 *et seq.*
 Bols, Maj.-Gen. L. J., 77, 99
 Bolshevism, 364, 374 *et seq.*, 469
 Bonham-Carter, Gen. C., 242
 Bossuet, 354
 Bottomley, Horatio, 162
 Boulanger, Gen., 476
 Boyd-Rochfort, Maj. H., 192, 244, 258
 Bright's *Smaller History of England*, 3
 Brockbank, Maj. J. G., 89
 Brownlow, Maj. G. J., 60
 Bruce, Maj. E. M., 374-5
 Buat, Gen., 393
- Buchanan, Maj. and Mrs., 7
 Buckley, Capt. W. P., 72
 Bullecourt, Battle of, 108
 Burnett-Stuart, Gen., 354
 Butler, Gen. R., 95, 131, 140, 154, 178,
 222-3, 238, 297, 412
 Butler, Sir W., 8
 Byng, Visct., 171, 177-8, 187, 189, 215-6
- Cachy, Tank attack at, 266-8, 271
 Cadorna, Gen., 319
 Camberley, 22 *et seq.*
 Cambrai, Battle of, 116, 169 *et seq.*, 236
 Cambridge, Duke of, 414
 Campbell, Col. R., 278, 387
 Campbell, Gen. Sir D., 252
 du Cane, Brig.-Gen., 44 *et seq.*
 Capper, Maj.-Gen. Sir John, 112, 118,
 131, 155, 162, 169, 175, 178, 222, 223,
 262, 273-5, 282, 286, 318-21, 336, 338
 Cardwell, Ld., 388, 411
 Carlyle, Thomas, 475, 477
 Carter, Gen. E. J., 308
Cavalry Journal, 392, 394
 Cavan, Ld., 420-3
 Cavour, 475
 Charlemagne, 316
 Charteris, Brig.-Gen. John, 137-8, 140-1,
 176, 238-9
 Charteris, Capt. E., 192-4, 202
 Chasseurs Alps, 277-8
 Châteauroux, Inter-Allied Tank Factory
 at, 271
 Chatham, 16 *et seq.*
 Cheesewright, Capt., 19-20
 Chelmsford, Ld., 414
 Chetwode, Field-Marshal Sir P., 395
 Chichester, 1-2
 Chichester, Capt. A. A., 10
 Childers, Erskine, 379
 Churchill, Winston, 35, 88, 162, 175,
 179, 220, 222-6, 238, 240, 261, 271,
 273, 282, 286, 320, 322, 344, 348, 361,
 364, 367, 373 *et seq.*, 395
 Clark, Gen. T., 222
 Clausewitz, 429, 442, 452
 Clemenceau, 261-2
 Clery's *Minor Tactics*, 5
 Collins, Col. R. J., 440
 Collins, Michael, 379
 Congreve, Gen. W. N., 253

- Count of Monte Cristo*, 3
 Courage, Lt.-Col. A., 94, 117, 119-20, 217, 288
 Cox, Capt. F., 10
 Crealock, Col., 414
 Cubitt, Maj.-Gen. T. A., 446
 Curragh, 6-7
 Curric, Gen., 297
- Daily Telegraph*, 440
 Dalzell, A. E., 8
 Dante, 2
 Darius, 322
 Davidson, Gen. J., 131, 140-1, 171, 189, 238, 243, 275
 Dawnay, Gen. G. P., 289, 286, 354-5
 Denikin, Gen., 374, 376
 Derby, Ld., 319
 De Wet, Gen., 379
 Dill, Col. J. G., 243, 389
 Dodd, —, 202, 205-6
Dragon's Teeth, 466
 Drain, Maj., 222, 224
 Duckham, Sir A., 179, 222, 282
 Dundas, Capt. R. W., 88
 Durnford, Lt.-Col., 414
- East, Sir C. J., 5
 Elles, Gen. H. J., 85 *et seq.*, 101-2, 104-5, 112, 114, 116-7, 122, 130-5, 144, 146, 150, 151, 155, 157, 160, 169, 170-2, 177-9, 182, 187-8, 192, 200-2, 211, 213, 215-6, 222, 225-6, 229, 234, 238, 240, 243, 247, 251, 255, 262, 266, 270, 275, 286, 290, 296-7, 304, 312, 352, 354-5, 360, 380
Empire Unity and Defence, 473
 d'Espey, Franchet, 211
 Evans, Sir L. Worthington, 423
Evening News, 82
 d'Eyncourt, Sir E. H. W., 175, 318
- Fagalde, Col., 211, 393
 Fanshawe, Gen. R., 152
 Fascism, 469, 471-2
 Fayolle, Gen., 305
 Fernie, Maj., 202
Field Service Regulations, 388-9
First Principles, 459
 Foch, Marshal, 271-2, 274-5, 291, 337, 339-41, 348, 351, 354, 370
 Foot, Maj. S. H., 217, 282, 296, 342-4, 347, 361, 367, 394
 Fothergill, John, 442
Foundations of the Science of War, 420, 458, 461
 French, Ld., 58, 476
- Fuller, Mrs. Sonia, 18-19, 29, 31, 44, 225, 416, 447
 Furse, Gen. Sir W., 175, 221, 286, 401, 406, 408
- Gardner, J., 427
 George V, King, 344, 359
 Gleichen, Maj.-Gen. Count, 58, 74
 Glyn, Capt. A., 20
 Glyn, Col., 414
 Gordon, Gen. F., 56
 Gordon, Lt.-Gen. A. H., 121
 Gough, Gen., 135-6, 177, 240
 Grant, Gen. C., 291
 Grant, Gen. U. S., 139
 Green, Capt., 56
 Green, Maj. G. A., 89, 151
 Guillemont Farm, Americans at, 356
- Haig, Sir D., 58, 82, 88, 95, 102, 111, 115-8, 132, 137 *et seq.*, 151, 156, 159-60, 171, 175-7, 211, 220, 238, 240, 243, 269, 271-2, 274, 286, 297, 319-20, 340-1, 354-5, 360, 363, 370, 412, 461
 Haig, Col.-Comm. Neil, 395
 Haking, Brig.-Gen. R. C. B., 21
 Haldane, Gen. Sir J. A. L., 291, 397
 Hamel, Battle of, 287 *et seq.*
 Hamilton, Gen. A. B., 36-7, 40-1
 Hamilton Gordon Committee on Organization of After-War Army, 369
 Hankey, Col. E. B., 202, 234, 252
 Hardress-Lloyd, Lt.-Col. J., 94, 148, 171, 202
 Harington, Gen. C. H., 281-2, 283, 286, 295, 322, 337, 345, 362
 Harker, Gen. G. M., 198, 209
 Hartly, H. B., 244
 Hawker, Peter, 50
 Headlam, Maj. C., 283
 Heath, Gen., 47
 Henderson, Adm. Sir W., 394
 Henniker, Maj. A. M., 32-3
 Herodotus, 1
 Heywood, Col. C. P., 415
 Hindenburg, 266
Hints on Training Territorial Infantry, 22
 Hitler, Adolf, 476
 Holland, —, 10
 Holland, Gen. A., 99-100
 Holland, Col. S. E., 76-7, 82-3, 98, 151, 175, 291, 410, 412
 Hotblack, Capt. F. E., 88, 100-1, 122, 133-4, 144, 151, 189, 232-3, 252, 350
 Howard-Vyse, Col. R. G. H., 395
 Humes' *Tactics*, 5
 von Hutier, Gen., 247
 Huxley, T. H., 459

- India, 17 *et seq.*
India in Revolt, 473
 Inter-Allied Tank Committee, 273
 Ireland, 376 *et seq.*
 Ireland, Conscription in, 361
 Ironside, Gen., 396, 415, 416, 440, 442, 446
- Jackson, Col. G. H. N., 434-5
 James, Capt., 3-4
 Jeans, Capt., 20
 Joffre, Marshal, 476
 Johnson, Col., 349, 397, 404-7
Journal of the Royal Artillery, 466
- Karslake, Col. H., 304
 Kavanagh, Sir C. T. M., 143, 225, 297
 Kellermann, —, 225
 Kemal Ataturk, 476
 Kentish, Gen., 57, 60, 62, 278
 Kiggell, Lt.-Gen. L. E., 82, 118-9, 131, 140-2, 156, 171, 189-90, 225-6, 234
 King, Lt., 15
 Kitchener, Lt., 43, 75, 266, 444
 Knight, Capt. R. C., 119
 Kritzingen, Gen., 12-13, 15
- Laing, Samuel, 459
 Lausanne, 2-3
 Lawrence, Gen. H. A., 234
 Lawrence, T. E., 396
 League of Nations, 469, 472
 Lecky, W. E. H., 459
 Leatham, Sir A., 394
 Lenin, 376, 476
 Lillers, Conference at, 132
 Lillywhite, G., 427
 Lincoln, Abraham, 475
 Lindsay, Col. G. M., 397, 430
 Lloyd George, David, 179, 348, 365
 Lyon, Gen. F., 51-2, 54, 177, 385
 Lys, Battle of, 263, 269
- McClellan, Gen., 447
 Maclean, Maj., 31-2, 35-6
 Macready, Gen., 377
 Maguire, T. M., 3
 Maistre, Gen., 278
 Malvern College, 3
 Mansfield, —, 202 *et seq.*
 March 21st, 1918, German offensive of, 245 *et seq.*
 Marieux, 51 *et seq.*
 Marinden, Gen., 252
 Martel, Capt. G., 88, 111-2, 122, 132, 136, 145, 211, 254, 256, 258, 318
Martyrdom of Man, 458
- von der Marwitz, Gen., 247
 Mason, Commandant, 277
 Mathew-Lannowe, Brig.-Gen., 345, 398
 Maxse, Gen. Sir I., 388
 Meldon, —, 6
 Messines, Battle of, 112, 116 *et seq.*
 Milne, Maj.-Gen. G. F., 26, 421 *et seq.*
 Milner, Lt., 291, 348
 Ministry of Munitions, 282
 Mitchell, Lt. F., 266
Modern Christianity a Civilised Heathenism, 458
 von Moltke, Helmuth, 476
 Monash, Gen., 297, 299
 Montagu, E. S., 367
 Montgomery, Gen. A. A., 296-7
 Moore, Adm., 222-4
 Moore, Sir John, 410-1, 429, 436, 451
Morning Post, 350-1
 Mosby, —, 174
 Muddle, Instructor, 5
 Mullingar, 6-7, 29
 Murray, Graham, 4
 Mussolini, Benito, 476
- Napoleon, 328, 453, 454, 475
 Nash, Gen., 222
 Neuve Chapelle, 54
 Nórregaard, Gen., 271
 Northcliffe, Lt., 226
Notes on the Training of the New Armies, 48
 Noyelle Vion, Conference at, 117
- O'Connor, Maj., 435
 Oldham, Col., 61
- Page, Capt. C. A. S., 51, 53
 Paget, Capt. B. C. T., 228
 Paley, Maj. A. T., 51-2, 252
 Palmerston, Lt., 475
 de la Panouse, Gen., 393
 Passchendaele, Battle of, 116, 143 *et seq.*, 236, 260
 Pershing, Gen., 280
 Pétain, Gen., 271, 370
 Pilsudski, Marshal, 476
- Quarterly Review*, 457
 Quilter, Capt. E. C., 296
- Radcliffe, Gen., 282, 286
 Raglan, Lt., 454
 Rawlinson, Gen., 118, 287, 297-300, 410
 Reade, Winwood, 458
Reformation of War, 416, 454
 Reynolds, Capt. P. G., 12, 15-16

